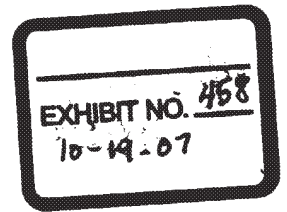


Exhibit 49



Expert Report of Professor Jerry A. Hausman

Jason White, et al. v. National Collegiate Athletic Association

September 6, 2007

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

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I. Qualifications

1. I am MacDonald Professor of Economics at the Massachusetts Institute of Technology ("MIT") in Cambridge, Massachusetts. I graduated from Brown University in 1968. I received a D.Phil. (Ph.D) in economics from Oxford University in 1973 where I was a Marshall Scholar. I have been at MIT since completing my D.Phil. My academic specialties are econometrics, the application of statistical methods to economic data, and applied microeconomics, the study of behavior by firms and by consumers. I teach a graduate course in applied industrial organization, which is the study of how markets operate.
2. I have been an associate editor of *Econometrica*, the leading economics journal, and the *Rand (Bell) Journal of Economics*, the leading journal of applied microeconomics. In December 1985, I received the John Bates Clark Award of the American Economic Association, awarded every other year for the most "significant contributions to economics" by an economist under the age of 40. In 1980, I was awarded the Frisch Medal of the Econometric Society. I have been a member of numerous government advisory committees for both the US government and the Commonwealth of Massachusetts. I have published over 150 academic research papers in leading economic journals including the *American Economic Review*, *Econometrica*, and the *Rand (Bell) Journal of Economics*. My curriculum vitae is attached as Exhibit A.
3. I have extensive experience analyzing antitrust and industrial organization issues. I have published a number of papers in this area, including "A Proposed Method for Analyzing Competition Among Differentiated Products," *Antitrust Law Journal*, 1992; "Competitive Analysis With Differentiated Products," *Annales d'Economie et de Statistique*, 1994; "Market Definition Under Price Discrimination," *Antitrust Law Journal*, 1996; "Valuation of New Goods Under Perfect and Imperfect Competition," ed. T. Bresnahan and R. Gordon, *The Economics of New Goods*, University

of Chicago Press, 1997; "Economic Analysis of Differentiated Products Mergers Using Real World Data," *George Mason Law Review*, 1997; "Efficiencies From the Consumer Viewpoint," *George Mason Law Review*, 1999; "A Consumer-Welfare Approach to the Mandatory Unbundling of Telecommunications Networks," *Yale Law Journal*, 1999; "The Competitive Effects of a New Product Introduction: A Case Study," *Journal of Industrial Economics*, 2002; "On Exclusive Membership in Competing Joint Ventures," *Rand Journal of Economics*, 2003, "Does Bell Company Entry into Long-Distance Telecommunications Benefit Consumers?," *Antitrust Law Journal*, 2002 and "Evaluation of Market Power: Prices vs. HHIs," *Antitrust Law Review*, 2007.

4. I have extensive experience in antitrust matters. I have testified as an expert witness in a number of antitrust proceedings. I have testified in three previous cases involving sports and antitrust: Chicago Professional Sports Limited Partnership v. National Basketball Association, Adidas America, Inc. v. NCAA, and Worldwide Basketball and Sport Tours, Inc. v. NCAA. My consulting and expert witness activity in civil litigation has been on behalf of both plaintiffs and defendants. A complete list of testimony I have given in the last four years is attached as Exhibit B. A list of materials that I considered is attached as Exhibit C. My hourly billing rate on this matter is \$900.

II. Assignment and Summary of Conclusions

5. Counsel for the National Collegiate Athletic Association (the "NCAA") has asked me to provide an economic analysis of the plaintiffs' antitrust claims arising from the NCAA's alleged limitation on athletics-based financial aid to the defined Grant-In-Aid ("GIA")¹ in Division I-A football ("DI-A

¹ The GIA consists of "tuition and fees, room and board and required course related books." NCAA Division I Bylaw 15.02.5. For simplicity, I refer to the actual NCAA financial aid rules at issue as the "GIA Rule" and the plaintiffs' proposed changes to the existing rules as the cost of attendance or "COA

football”) and Division I men’s basketball (“DI men’s basketball”). I also respond to certain aspects of the reports of Professor Roger Noll and Dr. Janet Netz.²

6. I find that the plaintiffs’ claims of negative antitrust impact from the GIA Rule are fundamentally flawed from an economic point of view for the following reasons.

A. Professor Noll and Dr. Netz make a number of errors in their economic analyses.

- Professor Noll fails to adequately consider the pro-competitive effects of the NCAA’s financial aid rules, including the GIA Rule. Professor Noll has not taken into account that the NCAA’s rules have resulted in an increase in the number of scholarships in DI-A football and DI men’s basketball due to entry by colleges and universities.
- Professor Noll fails to address effects in the output markets, where I find that the NCAA’s rules have pro-competitive effects.
- Professor Noll claims that distortions exist in the coaches’ market due to the NCAA’s rules. However, he fails to consider that the correct market for coaches includes professional sports, which is the primary reason for high coaches’ salaries rather than the GIA Rule.
- Professor Noll claims that some students’ decisions regarding attending college are distorted. However, Professor Noll ignores the fundamental problem of excess demand in his defined market for “higher education services” by student athletes (“SAs”) (or excess supply by SAs as alleged sellers of services).³ As a result of this excess demand, there are no anti-competitive effects in the quantity of scholarships since the place of any SA who decides against attending college at a specific college or against attending altogether is taken by another SA.

Rule.” I recognize this terminology oversimplifies both the existing financial aid regime and the plaintiffs’ proposed changes, but the terminology does not affect my analysis or opinions.

² Expert Report of Roger G. Noll, August 9, 2007 (“Noll Report”); Expert Report of Janet S. Netz, Ph.D., August 9, 2007 (“Netz Report”). Other expert witnesses will address parts of Professor Noll and Dr. Netz’s testimonies which I do not consider, e.g. damages.

³ Whether I consider excess demand by SAs in the market for higher education services or excess supply by SAs as alleged sellers of services does not alter my conclusions.

- Dr. Netz's econometric analysis is unreliable and overstates the marginal revenue product of student athletes.

B. The NCAA's rules, including the GIA Rule, do not have negative antitrust impacts on the plaintiffs, even if I assume the input market used by Professor Noll.

- I disagree with plaintiffs that the input market is the proper market to examine in terms of the impact of the GIA Rule from an antitrust economics point of view.
- However, I find that even if I assume and analyze an input market of DI-A football and DI men's basketball SAs, there are no negative competitive effects in this input market due to the NCAA's rules.
- I find that increasing the GIA to the cost of attendance ("COA") would have no impact on supply by SAs in the input market. There is no proof, and I find it highly unlikely, that any SA decided to play professionally or decided against college as a result of the GIA Rule.
- At the current GIA rate, the input market is characterized by excess supply of potential SAs. Thus, there would be no additional output of SAs if the GIA Rule were replaced by the COA Rule.
- I find that the GIA Rule is pro-competitive and leads to greater numbers of scholarships due to entry of new programs into DI-A football and DI men's basketball.

C. The NCAA's rules, including the GIA Rule, are economically efficient:

- The NCAA's rules are necessary for the differentiation and quality of the college athletics product.
- The NCAA rules have increased output in the primary market that Professor Noll analyzes, the market for higher education services for "gifted athletes" in football and men's basketball.
- The NCAA's rules have positively affected output of the college athletics product by increasing both its volume and quality.

- The NCAA rules have increased output and quality in the other markets that Professor Noll considers, markets for DI-A football and DI men's basketball.
- By doing so, the NCAA's rules have increased the welfare of SAs, member institutions, and consumers.

D. A change from the NCAA's GIA Rule to a COA Rule would be economically inefficient:

- The increased cost arising from a COA Rule would lead to a decrease in output in the market for higher education services for "gifted athletes" in football and men's basketball.
- The increased costs arising from a COA Rule would likely negatively impact non-SAs as well as SAs in other sports since the shortfall would have to be remedied from other sources.
- A COA Rule would result in higher economic costs to all parties involved since the inclusion and verification of many types of expenses included in the COA would be subject to interpretation. The GIA Rule is a more efficient, "bright line" rule.
- The plaintiffs' proposed outcome, in which SAs would receive scholarships valued at COA plus some or all of the other financial aid and benefits they currently receive, would undermine the NCAA's unique brand of college athletics.

E. The NCAA's rules, including the GIA Rule, are pro-competitive.

- The NCAA's rules have enhanced the output of the college athletics product, both in terms of volume and quality. Consumer demand for the enhanced output is evidenced by increased consumer interest in the form of higher attendance and television viewership since the implementation of similar rules likewise designed to achieve competitive balance. I find that the evidence shows increased consumer welfare.
- The NCAA's rules have increased competitive balance as I show with empirical results from the DI-A football bowl games and the NCAA DI post-season men's basketball tournament. I find that

increased competitive balance has contributed to the quality of the college athletics product and, hence, increased consumer welfare.

F. Professor Noll's suggested alternatives to the GIA Rule do not make economic sense.

- The COA Rule would lead to fewer schools entering (and/or more schools exiting) DI-A football and DI men's basketball, resulting in lower numbers of available scholarships.
- A lump-sum payment from the revenue rich schools to the revenue poor schools would provide incentives for the revenue rich schools to leave the NCAA and form their own "super conference," leading to lower numbers of available scholarships.
- Raising tuition and fees for all students does not make economic sense since regular students already have higher debt loads, and SAs receive a valuable lifetime benefit of a college degree with little to no debt.

III. Market Definitions

7. I agree with Professor Noll's general approach to market definition in theory, using the hypothetical monopolist approach.⁴ However, while he explains that supply substitution is important, in my view he fails to take account of its economic importance in his report.⁵ While Professor Robert Willig generally considers definitions for the markets involved in this proceeding, I will analyze the markets Professor Noll considers in his report. I will largely take Professor Noll's market definitions as given assumptions and perform my economic analysis within the context of these assumed market definitions. I find that even using Professor Noll's market definitions, his conclusions of anticompetitive effects do not follow because of mistakes in his economic analysis.

⁴ Noll Report, pp. 38-46.

⁵ Noll Report, p. 43.

8. Professor Noll's primary market, in which he does most of his economic analysis, is the proposed product market for "higher education services to athletes whose athletic skills and academic abilities are sufficient for them to be offered an athletic scholarship in Division IA football or Division I basketball."⁶ Professor Noll concludes that for students who want to compete at the highest level for football and men's basketball, colleges that play in DI-A football and DI men's basketball comprise the relevant market for economic analysis. Professor Noll takes the geographic market to be the U.S.
9. However, Professor Noll has failed to take into account supply substitution which he correctly states occurs when new suppliers enter a relevant market "by changing their product lines to produce the relevant product."⁷ For example, since 1994, 14 colleges, offering approximately 1190 scholarships, have entered DI-A football, increasing by about 13% the total input quantity of DI-A football GIA scholarships given to college football players in Division I-A. Similarly over the same period, 30 colleges, approximately 390 scholarships, and about 10% of scholarships have moved into DI men's basketball.⁸ These supply responses must be taken into account or incorrect economic analysis will result.⁹ Thus, the correct economic approach needs to take into account actual and potential entry and exit of colleges. These decisions will be affected by the costs involved, such as the levels of

⁶ Noll Report, p. 47.

⁷ Noll Report, p. 40.

⁸ Entry has increased the number of DI-A football scholarships by 13% in the period 1994-2007. If I take into account future planned entry, entry will have increased the number of DI-A football scholarships by 14% in the period 1994-2014. National Collegiate Athletic Association, "Multidivision, Reclassifying and Provisional Institutions for 2007-08," <http://www1.ncaa.org>, downloaded August 30, 2007; National Collegiate Athletic Association, "Official 2006 NCAA Divisions I-A and I-AA Football Records Book," August 2006, pp. 408, 518-519. For men's basketball, the comparable figures are 10% for 1994-2007 and 17% for 1994-2014. National Collegiate Athletic Association, "Official 2007 NCAA Men's Basketball Records Book," November 2006, pp. 240, 274-276. Some football programs have exited from DI-A (or its predecessor) over this period. Since Plaintiffs' proposal to go from GIA to COA would increase costs, the amount of exit would likely have been greater with a COA Rule, as I discuss subsequently. Thus, in calculating my percentage increase in the number of scholarships, I do not subtract off scholarships from college programs that have exited DI-A football.

⁹ Some approaches to market definition consider only demand substitution and consider "uncommitted entrants" as taking account of supply substitution. Professor Noll appears to include supply substitution in his approach to market definition. Either approach leads to similar conclusions.

athletics scholarships, which Professor Noll does not consider. Otherwise the analysis of the competition effects of the GIA Rule will be incorrect because the most important economic measure for determining the competitive effect, market quantity, will be incorrectly measured.

10. Professor Noll accepts the plaintiffs' definition that DI-A college football and DI men's basketball are relevant markets.¹⁰ While I do not agree with plaintiffs' claim, I will do my economic analysis within the confines of these market definitions. Professor Noll recognizes that plaintiffs have not alleged or claimed that any anti-competitive conduct has occurred in these markets.¹¹ However, a correct economic analysis must consider effects in these output markets, because the input market that Professor Noll considers is linked to these output markets by the activities of the SAs. In principle, a quantity restriction in an input market can have an anti-competitive effect in a related output market. However, in this case, the GIA Rule does not restrict quantity so no anti-competitive effect occurs. When a proper economic analysis is performed, the effects are pro-competitive, as I explain below. A similar outcome occurs in the output markets, which Professor Noll fails to consider, and which I discuss below.

11. Professor Noll's analysis includes a considerable focus on increases in coaches' salaries.¹² However, he never defines the market in which coaches participate. I believe that for coaches, the two relevant markets are for college and professional football coaches, and college and professional basketball coaches. In football both colleges and NFL teams compete for the same coaches. Many examples exist of coaches who have gone from a college to the NFL and vice-versa. Pete Carroll, the current coach of the University of Southern California, who used to be the head coach of the New England Patriots, is an example.¹³ However, not only head coaches are involved as many assistant coaches move between the college and

¹⁰ Noll Report, pp. 62-66.

¹¹ Noll Report, p. 63.

¹² E.g. Noll Report, pp. 99-100.

¹³ See Toledo Dep., pp. 134:2-136:13; Byers Dep., pp. 64:17-64:21, 65:2-3; Meyer Dep., pp. 98:13-99:7, 99:17-100:23.

professional ranks. Similarly, numerous basketball coaches have moved between college and the NBA. Rick Pitino moved from the University of Kentucky to the Boston Celtics and is now at the University of Louisville. Thus, college and professional teams compete for top-notch coaches and coaches' salaries reflect this competition. A hypothetical college monopsonist could not decrease top coaches' salaries because the coaches would take professional coaching jobs. Thus, economic analysis of top coaches' salaries must consider both college and professional teams and their demand for coaches. Professor Noll never considers the effect of demand from professional teams for top coaches so his economic analysis is incorrect. Professor Noll's analysis of the relationship between the GIA Rule and coaches' salaries is also incorrect, as I explain below.

IV. Input Market: No Negative Effects of NCAA Rules

12. I disagree with plaintiffs and Professor Noll that the only market to examine for anti-competitive effects is the input market. As I understand the antitrust laws, their purpose is to protect consumers' interests. With that goal in mind, the proper economic focus is on both the input market and the output market, particularly the college athletics product produced by the NCAA and its member institutions. I demonstrate subsequently that the quality of that product has increased due to the NCAA's rules, and that this increase in quality has been demonstrated by greater demand on the part of consumers in the form of higher attendance and television viewership.
13. While I do not agree that the input market is the proper economic market to examine, I find that even if I conduct an analysis of this market, there are no negative effects in the input market due to the NCAA's rules. Indeed, I find a pro-competitive effect in the input market.

A. Professor Noll's Analysis

14. Professor Noll recognizes that the NCAA's DI-A football division has 119 members, each with 85 available football GIAs, and DI men's basketball has 336 members, each with 13 available men's basketball GIAs.¹⁴ The main anti-competitive effect that Professor Noll claims occurs in the input market is that individual GIA amounts are lower than if no "GIA cap" existed.¹⁵ However, even with the GIA cap, this effect does not affect competition if the quantity of scholarships remains the same, or increases, which I demonstrate below is the outcome in this case.¹⁶ The GIA Rule allows more schools to enter and remain in the defined market, so output is increased. Even assuming that some schools might "pay" SAs more if the rules were different, colleges use the difference or money "saved" to support other athletic programs and other activities that universities are designed to accomplish (i.e. education). Student athletes do not "deserve" larger scholarships just as regular students do not "deserve" lower tuition. The antitrust laws are designed to protect competition, not the financial interests of elite SAs. Professor Noll never considers this important economic point.
15. Plaintiffs and Professor Noll ignore a fundamental problem in the defined input market: excess supply. As the plaintiffs characterize the input market, it consists of the potential SAs in DI-A football and DI men's basketball as sellers of athletic services and the NCAA DI-A football and DI men's basketball programs as buyers of those services. The only harm considered by Professor Noll or Dr. Netz is to the SAs as "buyers" of higher educational services, or as sellers of athletic service who also receive a college education. Professor Noll also characterizes the SAs as "inputs in

¹⁴ Noll Report, p. 68. Dr. Netz contends that all schools award all available GIAs each year. Netz Report, pp. 25-28; Exhibit 6. I accept that contention for the purpose of this analysis. The number of GIAs per college was decreased in the mid-1990s. Plaintiffs do not challenge this reduction.

¹⁵ Noll Report, pp. 97-98.

¹⁶ Economic analysis of the competitive impact of a rule (or business strategy) typically uses the output effect as a guide to the overall competitive impact. See e.g. Robert S. Pindyck and Daniel L. Rubinfeld, *Microeconomics*, Sixth Edition, Pearson Prentice Hall, 2005, p. 265.

the sports markets.”¹⁷ However, looked at either way, there is no output reduction. Under the current GIA Rule, there are more than enough potential SAs willing and able to “sell” athletic services or to “buy” reduced cost educations.¹⁸

16. Due to this excess supply of SAs under the current GIA Rule, there is no antitrust impact from alleged adherence to the GIA Rule rather than a proposed COA Rule by the member institutions of the NCAA. Antitrust impact would occur if the GIA Rule led to lower supply of potential SAs compared to the COA Rule. But if the scholarship level were to increase from the GIA to the COA, there would continue to be an excess supply of potential SAs. The NCAA has made a number of changes in allowable financial aid over the years. Despite these changes, the quantity supplied has always far exceeded the quantity “purchased” by the schools.¹⁹ Thus, an excess supply of SAs has always existed, whatever the allowable level of financial aid. Therefore, no negative effects on the quantity supplied have occurred.

17. There would be no change in the supply on a number of different dimensions if the change were made from the GIA Rule to the COA Rule. For example, as plaintiffs have stated, no SA decided to play professionally, and no SA decided against college because of the GIA Rule versus the COA Rule.²⁰ While Professor Noll suggests that there are some prospective SAs who remain and work at home because the cost of education is too high (or the GIA is too low), he offers no proof of this assertion.²¹ Further, if some

¹⁷ Noll Report, p. 63.

¹⁸ One can consider the GIA as compensation to SAs if they are sellers of athletic services or as a reduced cost of education if they are buyers of educations. For most purpose in this litigation the two approaches are equivalent.

¹⁹ For example, the existence of walk-ons at most NCAA Division I programs and the need for squad size limits over and above GIA counter limits demonstrates the existence of excess supply.

²⁰ Responses to the NCAA’s First Set of Interrogatories to Plaintiffs, Responses to Interrogatories 15 and 16.

²¹ At most, Professor Noll points to the Rivals.com recruitment data, particularly to the approximately 6% for whom his staff was unable to find any information on a college roster or using Google searches. Noll Report, pp. 60, 99. Professor Noll points out the limitations of these results: “We do not know how many of these students decide not to attend for financial reasons and how many do not attend for academic or behavioral reasons.” Noll Report, p. 99. More generally, Professor Noll concludes that “This effect is not

prospective students did decide not to attend college because the GIA Rule is used rather than the COA Rule, no reduction in quantity supplied has occurred because of the excess supply of prospective SAs, as I have explained above. Thus the GIA Rate does not impose a restriction in the supply of potential SAs.

18. The reason for the excess supply is that the SAs benefit greatly from the GIAs they receive. The monetary value of a 4-year GIA ranges, according to one set of estimates, from approximately \$43,000 for an in-state SA at public institution to \$122,000 for a private institution; for five years, the approximate values are from \$54,000 for public to \$152,000 for private.²² Furthermore, an SA often graduates with no debt, compared to the student who graduates with approximately \$18,900 in average debt.²³
19. Moreover, the value the SAs receive while in college understates the lifetime value of the college degree. The average annual income for a college graduate (25-64 years of age) is 72% higher than that of a high school graduate.²⁴ Over a lifetime, a college graduate earns \$2,140,864 compared to \$1,226,575 for high school graduates, or the college graduate earns 75% more than a high school graduate.²⁵ Thus the SAs receive a significant lifetime benefit from the GIA. Professor Noll also recognizes the benefits that students receive from a college education.²⁶

likely to be large, because the difference between COA and the GIA cap is not a large fraction of the total opportunity cost of college." Noll Report, p. 98.

²² NCAA 245895-245896.

In addition, many SAs receive scholarships for a fifth year, even if athletically ineligible.

²³

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\$18,900 is the average debt level for a student in 2002. Baum S, O'Malley M., "College on Credit: How Borrowers Perceive their Education Debt Results of the 2002 National Student Loan Survey," https://www.nelliemae.com/library/research_10.html, downloaded August 28, 2007.

²⁴ U.S. Census Bureau, "The Big Payoff: Educational Attainment and Synthetic Estimates of Work-Life Earnings," July 2002, Table 1.

²⁵ U.S. Census Bureau, "The Big Payoff: Educational Attainment and Synthetic Estimates of Work-Life Earnings," July 2002. Data from 2007 yields similar results of \$1,949,667 for a college degree and \$1,211,913 for a high school degree. Bureau of Labor Statistics, "Usual Weekly Earnings of Wage and Salary Workers: Second Quarter 2007," July 2007.

²⁶ Noll Report, p. 89.

20. What neither plaintiffs nor Professor Noll consider is that the GIA Rule has led to an increase in output in the education input market they consider. Since 1994, 14 colleges have moved to DI-A football, resulting in an increase of about 13% of the total input quantity of football GIA scholarships (1190 scholarships) given to DI-A college football players. Similarly over the same period, approximately 30 colleges and 10% of scholarships (390 scholarships) have moved into DI men's basketball. Thus, the total quantity of scholarships for football and men's basketball student athletes has increased while the GIA Rule has been in effect. This outcome is pro-competitive.
21. Since many colleges lose money on athletics generally, and many lose money on their football and men's basketball programs specifically, cost is an important economic consideration in the decision to participate in DI-A football and DI basketball.²⁷ Deposition testimony has highlighted the importance of these cost considerations.²⁸ While the "big time" football and men's basketball schools are well known and have high revenues, the large majority of participants do not have "big time" status. Nevertheless, they provide valuable GIAs to SAs. The NCAA rules, by limiting the cost of participation in DI-A football and DI men's basketball, have led to more scholarships, and thus the number of scholarships is higher than in the absence of the NCAA rules. This outcome is pro-competitive.
22. Professor Noll claims to identify a second anticompetitive harm in that some students are discouraged from attending college because of the smaller

²⁷ U.S. Department of Education, "Equity in Athletics Data Analysis (EADA) Cutting Tool Website," <http://opc.ed.gov/athletics/>, downloaded August 31, 2007.

²⁸ Brand Dep., pp. 65:6-10, 134:7-134:18, 252:15-21, 254:9-23, 255:4-13, 255:21-256:6; Berst Dep., pp. 198:22-199:9, 200:2-200:5, 201:20-202:25, 217:3-217:10; Leland Dep., pp. 62:16-63:8; Elgin Dep., p. 20:15-20:18; Guerrero Dep., pp. 53:15-53:20, 139:11-139:15; Toledo Dep., p. 84:3-84:16; Blair Dep., pp. 31:8-32:23, 68:24-69:11. I note that if the scholarships were increased to COA, one option for the NCAA may be to decrease the number of scholarships for football and men's basketball. This action would lead to an output decrease. I understand that the plaintiffs do not challenge the NCAA's ability to determine the number of scholarships for football and men's basketball. The limits have changed over time, as I discuss below, without objections from the plaintiffs.

scholarships they receive.²⁹ He admits that the effect, if it exists, “is not likely to be large.”³⁰ However, Professor Noll makes two errors in his claimed effect. First, no output effect occurs. Professor Noll states that the “GIA cap cause[s] fewer student athletes to attend college than would be the case if the ceiling were higher.” Yet, this claim is incorrect because Professor Noll recognizes that almost all scholarship positions are filled.³¹ This outcome occurs because of the excess supply of SAs that I discussed above. If Professor Noll is correct that a small number of students decide not to attend college because of the size of the scholarship, their places are taken by other student athletes who accept the scholarships. Thus, more than enough supply of SAs exists at the current GIA Rule so that a substitution effect occurs to replace prospective SAs who decide not to attend college with other SAs who are ready to accept a GIA under the current rules.³² No change in quantity occurs because more potential student athletes exist than the number of scholarships in a given year.

23. Professor Noll’s second error is that he fails to recognize that lower costs lead to a greater number of scholarships as more colleges decide to participate in DI-A football and DI men’s basketball. Greater numbers of colleges translates into greater numbers of scholarships, so output actually increases. This outcome is pro-competitive.
24. Professor Noll also claims that the NCAA rules drive up the price of “higher education services.”³³ I disagree with this claim. First, the market for higher education services is a US-wide, competitive market, and Professor Noll is incorrect to consider a small subset of this market having to do with

²⁹ Noll Report, pp. 98-99. I note that plaintiffs previously stated that they did not believe that any such effect existed. Responses to NCAA’s First Set of Interrogatories to Plaintiffs, Response to Interrogatories 15 and 16.

³⁰ Noll Report, p. 98.

³¹ Noll Report, pp. 90-91. Dr. Netz also finds that almost all scholarship positions are filled. Netz Report, pp. 25-28; Exhibit 6. To the extent that not all scholarship positions are filled, it is a given college’s decision not to offer the scholarship, not a lack of supply by aspiring student athletes.

³² Furthermore, I understand that the few SAs who cannot afford to bridge the gap between GIA and COA are often offered Pell grants, so that the set of SAs who do not attend college due to the gap is likely to be zero (empty). Thus the supply of potential SAs is likely to be inelastic between the GIA and COA.

³³ Noll Report, pp. 9, 62, 97.

SAs. In this larger market, any alleged impact on the SAs does not have anti-competitive effects on the market for higher education services since SAs constitute a small proportion of this market. Second, Professor Noll may be claiming that SAs pay more than they “should” because they only receive GIA rather than COA. However, I note that the GIA covers education facilities, courses, and instruction as well as athletic facilities, training and instruction that SAs receive. GIA also covers course related books and room and board. Professor Noll has not demonstrated that the prices students or SAs pay for the services that universities provide is increased by the GIA Rule rather than the COA Rule. The difference between COA and GIA is comprised of services that universities do not provide. These services are provided in competitive markets, which the universities do not control; thus the plaintiffs’ claims reduce to an assertion that SAs are not properly reimbursed for expenses they incur with third parties. Given this fact, the proper economic approach is to view SAs as sellers of athletic services, and a correct economic analysis would examine not only this input market but also the affected downstream output markets. I show below that the effects of the NCAA rules are pro-competitive in the output markets.

25. Another anticompetitive harm that Professor Noll claims is a “distortion in the market for coaches.”³⁴ As I explained above, Professor Noll never defines a “market for coaches.” However, a correct market definition would include both college and professional coaching positions for reasons I have explained above. Since colleges have to compete with professional teams for top-ranked coaches, no distortion occurs in the market for coaches as a result of the GIA Rule.

³⁴ Professor Noll states this is a “second anticompetitive harm” (p. 99) while on the previous page he states that “discouraging attendance” is “a second anticompetitive harm.” (p. 98) I do not know whether he claims three anticompetitive harms or that the lower scholarship amount (p. 97) is not claimed to be an anticompetitive harm. Furthermore, Professor Noll claims that the GIA Rule leads to “encouraging cheating and undermining academic values.” Noll Report, p. 101. Professor Noll provides no economic evidence for this claim, and I find no such effects in any relevant market.

26. Professor Noll's Tables 4 and 5 reflect this increasing competition for coaches from professional sports where coaches' salaries have increased greatly in the periods 2001-2005 or 2002-2005. Further, a large proportion of the high salaries that are reported are not paid by the colleges; instead, they are paid by athletic apparel companies or other third parties.³⁵ Thus these salaries are not related to the amount of the scholarships the student athletes receive.
27. Professor Noll has not identified an anticompetitive effect. His claim is that too many talented people go into coaching. However, without examining their other possible career choices, this claim cannot be made because many (most) labor markets in the US are not perfectly competitive, an observation with which I would expect that Professor Noll would agree.
28. In any case, Professor Noll's economic analysis regarding coaches' salaries is incorrect. He claims that "suppression of aid to athletes makes successful coaches more valuable because it widens the gap between the revenues from success...and the costs of achieving it."³⁶ He defines the gap between revenues and costs as $V - R - F$, where V is value, R is recruiting expenditure, and F is the scholarship amount.³⁷ Professor Noll claims that a reduction in F leads to higher coaches' salaries. However, he has failed to consider the marginal relationship where economic decisions are made. Let me hold V and R fixed and consider the decision of hiring a head coach (Professor Noll uses Urban Meyer) who has "effective coaching units," c , at a wage, w , per unit. A coach costs $w * c$, so a better coach commands a higher price since he provides more coaching units, c .³⁸ The economic decision for the college is to set the marginal value from a slightly better coach equal to the marginal cost of the coach. Since F is a fixed cost for any college (it does not change depending on the coaching decision), if F were

³⁵ USA Today, "Contracts for college coaches cover more than salaries," November 16, 2006; Toledo Dep. at 136;18-137:20. For example, Coach Kirk Ferentz of Iowa earned an additional \$1.8 million from outside sources.

³⁶ Noll Report, p. 99.

³⁷ Noll Report, p. 75.

³⁸ The wage per unit w can depend on c and the same results follow.

increased to say F^2 (e.g. from GIA to COA based scholarships) the marginal value of the coach will not change, so the economic decision will not change in terms of hiring a given coach. Thus, there is no economic relationship between a change in F at a given college and the decision of how much to pay for coaching services.³⁹

29. Similarly, Professor Noll originally claims that an anti-competitive effect arises because NCAA members will “have a larger share of sales in the final product markets than is economically efficient.”⁴⁰ Professor Noll does not return to this claim subsequently, or offer any proof in support for the claim, but it is incorrect. To the extent that a firm (or group of firms) exercises market power to increase price by restricting output, a subsidy to the firms (e.g. the GIA Rule instead of the COA Rule) decreases the output restriction and increases consumer welfare and typically economic efficiency. Even a monopolist finds it profit maximizing to reduce price and increase output when input prices decrease, which is the effect of a subsidy. Thus, to the extent that Professor Noll claims NCAA schools exercise market power in an output market, a subsidy in the input market for SAs would decrease the distortion.

30. Professor Noll’s third claimed anticompetitive harm is a distortion in the choice of colleges.⁴¹ Professor Noll claims that students “face a substantial financial hardship” if they choose to attend a college far from home, but no evidence exists for this claim.⁴² Indeed, I understand that colleges are allowed to reimburse student-athletes for travel to and from their homes since the start of the Student-Athlete Opportunity Fund (“SAOF”).⁴³ However, even if this claim were true, it does not create an anti-competitive effect. Output is not lower if a student athlete decides to attend college in

³⁹ I also note that the movement of coaches like Urban Meyer from Utah to Florida supports my point that there are widely varying economic situations within DI-A football. Utah could not afford to compete with Florida. Thus the GIA Rule helps to offset the advantages of schools with greater financial resources.

⁴⁰ Noll Report, p. 7.

⁴¹ Noll Report, pp. 100-101.

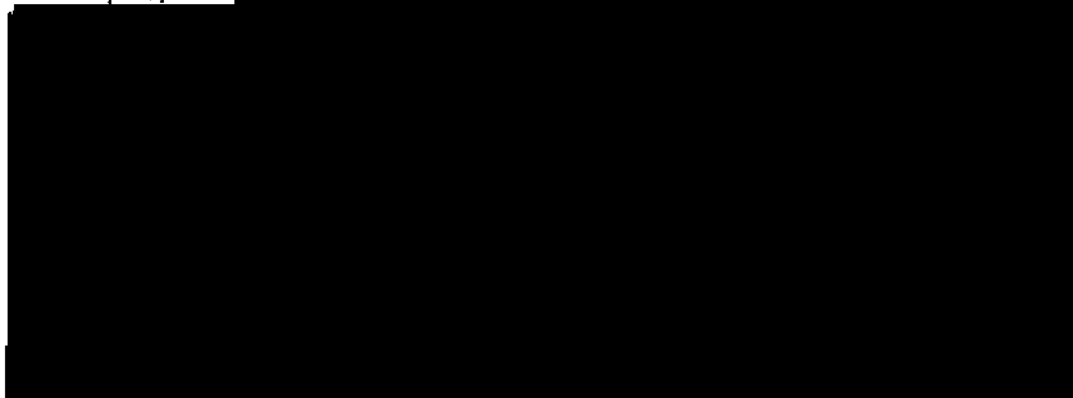
⁴² Noll Report, p. 101.

⁴³ NCAA, “Student-Athlete Opportunity Fund (SAOF) Guidelines,” www1.ncaa.org, downloaded August 28, 2007.

Florida, rather than California. The same number of student athletes receives scholarships whether or not travel costs are included. Further, in the downstream markets, as I discuss below, the rules have led to increased output because not all of the best athletes go to “big time” schools. Very few students who are not athletes receive a full COA scholarship, contrary to Professor Noll’s claim since almost all students are expected to contribute to the cost of their education and the norm is for financial aid packages to include significant loan components.⁴⁴ Only the very richest schools (the large majority of which are not involved in DI-A football such as those in the Ivy League and wealthy liberal arts colleges, e.g. Williams College) can afford to give substantial numbers of students full COA-based scholarships.

31. Professor Noll’s claim that the COA Rule is a less restrictive alternative because it would decrease restrictions on competition is not correct because he has not taken into account its effect on supply.⁴⁵ As I discussed, entry of new schools into DI-A football and DI men’s basketball has increased the number of scholarships available to student athletes.⁴⁶ Increases in cost caused by an increase in the scholarship level to COA would decrease output because poorer schools would not be able afford the costs of being in

⁴⁴ Noll Report, p. 101.



⁴⁵ Noll Report, p. 107.

⁴⁶ Professor Noll claims that “Qualitatively, the effect of raising the price in the market for student athletes is to reduce the number of student athletes who are offered scholarships.” (p. 63) This claim is incorrect when excess supply exists at the current price. Professor Noll has failed to account for the “rationing” effect when excess supply exists. By rationing I mean that numerous potential SAs do not receive a GIA to play football or men’s basketball at a Division IA football college or Division I men’s basketball college. Thus, rationing arises from the excess supply that I discussed above.

these divisions.⁴⁷ Further, Professor Noll has not demonstrated that the COA Rule for student athletes actually enhances competition in any input or output market. That some students play close to home could well lead to increased fan interest and increased output in the output markets. The number of scholarships remains fixed, or it could even decrease due to the higher costs.

32. I find that Professor Noll has failed to identify anticompetitive effect in terms of output in any relevant market.

B. Dr. Netz's Analysis is Unreliable and Overstates the Marginal Revenue Product of Student Athletes

33. Furthermore, I find Dr. Netz's MRP regressions to be misguided. In a perfectly competitive labor market with no economies of scale, wages will be equal to a worker's marginal revenue product ("MRP").⁴⁸ However, given the significant fixed costs and complementarities present in football and men's basketball programs, economic analysis would not lead to a perfectly competitive outcome. According to Dr. Netz, "[i]f the value of the student athlete is higher than the GIA cap, then the school would be willing to pay more to the student-athlete than the GIA cap allows."⁴⁹ To calculate the value of a student-athlete, Dr. Netz calculates MRPs for DI-A football players and DI men's basketball players. Although based on her results Dr. Netz claims that athletes' value to teams is greater than the value of a GIA, Dr. Netz finds that a substantial fraction of athletes have an MRP that is less than the value of a GIA. Taking her results at face value, Dr. Netz finds that over 35% of football players and over 15% of men's basketball players have MRPs less than the value of a GIA.⁵⁰

⁴⁷ Toledo Dep., pp. 85:22-86:14, 119:15-120:2, 162:2-15; Hansen Dep., pp. 73:11-73:16, 78:21-79:10, 124:1-125:2; Foley Dep., pp. 21:17-23:1, 25:2-25:14, 45:20-46:16; Elgin Dep., pp. 23:1-24:1; Kirwan Dep., pp. 87:15-88:4, 104:1-19; Warde Manuel Declaration, ¶ 6; Derek van der Merwe Declaration, ¶ 4; Tom Yeager Declaration, ¶ 6.

⁴⁸ If there are economies of scale, a firm cannot pay each factor of production its marginal revenue product without losing money.

⁴⁹ Netz Report, p. 37.

⁵⁰ Netz Report, p. 41.

34. However, Dr. Netz's MRP analysis is unreliable because it contains many conceptual and econometric errors that cause her to overestimate MRPs. Dr. Netz follows the approach introduced by Professor Gerald Scully in 1974 and estimates MRPs for individual athletes in a multi-step process.⁵¹ In the first step, Professor Netz estimates the relationship between team statistics and team winning percentage. In the second step, Professor Netz estimates the relationship between team revenue and team winning percentage. Professor Netz then calculates the MRP for an individual athlete based on the athlete's contribution to team statistics, the marginal effect of team statistics on winning percentage, and the marginal effect of winning percentage on revenue.
35. The first error in Dr. Netz's analysis is that, due to the team nature of football and basketball, Professor Scully's approach (which was developed for baseball) cannot be used to determine an individual's contribution to team wins or revenue. As Professor Scully has written: "Player skills interact with one another in team sports. The degree of interaction among player skills determines the nature of the production function. If player input is unambiguously measured and largely independent of other player inputs (an additively separable production function), the player's contribution to team wins or revenue is known. In baseball the contest is mainly between pitcher and batter... Individual performance can be accurately measured."⁵² In contrast, Professor Scully notes that "[i]f the production technology is not additive, but exhibits complementarity among inputs, then the individual contribution to team output (revenue) cannot be accurately measured."⁵³ The primary example Professor Scully gives of such a sport is football, because "[i]n football the interaction of players is crucial to team performance."⁵⁴ For example, an outstanding quarterback will enhance the productivity of the wide receivers on the team. According

⁵¹ Gerald Scully, "Pay and Performance in Major League Baseball," *American Economic Review* 64, 1974, pp. 915-930.

⁵² Gerald Scully, *The Market Structure of Sports*, University of Chicago Press, 1995, p. 64.

⁵³ *Ibid.*

⁵⁴ Scully, p. 65.

to Professor Scully, basketball also exhibits this property, although to a lesser extent than football.⁵⁵ In basketball, a superstar player like Michael Jordan draws most of the defensive attention to himself, thereby increasing the productivity of his teammates.⁵⁶

36. As a result of the interdependencies between athletes in football and basketball, Dr. Netz cannot accurately measure the MRPs of individual football and basketball players.
37. In addition to this conceptual problem in measuring the contribution of individual performance to team performance, Dr. Netz faces an additional problem in that the method she uses to measure individual performance of basketball players is nonsensical. To measure the contribution of a player's performance to making field goals to that player's MRP, Dr. Netz multiplies the coefficient on field goal percentage in the winning percentage regression by the team field goal percentage, and multiplies that product by the player's share of team field goal attempts. To see the implications of Dr. Netz's methodology, consider two players on the same team who have identical statistics except for their field goal percentage. The first player takes half of the team's field goal attempts and makes 100%, while the second player takes the other half of the team's field goal attempts and makes 0%. The first player is obviously significantly more valuable, but since the only individual characteristic that affects the field-goal component of MRP in Dr. Netz's methodology is a player's share of team field goal attempts, Dr. Netz would say that the two players have exactly the same MRP.
38. Another error with Dr. Netz's analysis is that, unlike Professor Scully, she calculates gross marginal revenue products, not net marginal revenue products. The net marginal revenue product calculation is relevant because

⁵⁵ Ibid. I previously discussed the effect of superstar players in basketball in my 1997 paper on professional basketball, Jerry A. Hausman and Gregory K. Leonard, "Superstars in the National Basketball Association: Economic Value and Policy," *Journal of Labor Economics*, 15, 1997, pp. 586-624.

⁵⁶ A study of the NBA finds evidence of significant spillovers in basketball, with a 10% increase in teammate productivity leading to a 4.5% increase in own productivity (Todd Kendall, "Spillovers, Complementarities, and Sorting in Labor Markets with an Application to Professional Sports," *Southern Economic Journal* 70, 2003, pp. 389-402).

in a perfectly competitive market with no economies of scale, the wage will equal the net marginal revenue product, which is equal to the gross marginal revenue product less the marginal cost of complementary factors that allow the athlete to attain his productivity (such as the training staff and facilities provided to athletes).⁵⁷ Dr. Netz makes no attempt to account for these costs, and thus overstates the relevant MRP.

39. In addition to Dr. Netz's errors in the use and implementation of the Scully model, there are problems with the Scully model itself that cause Dr. Netz's estimated MRPs to be overstated. In particular, the Scully model fails to take into account non-player inputs into team performance (such as the quality of the coaching staff).⁵⁸ Since these inputs leads to increases in both team statistics and winning, when they are omitted from the analysis (as Dr. Netz does), increases in winning that should correctly be assigned to non-player inputs are instead assigned to the performance of the players, thereby leading to an overestimate of player MRPs.⁵⁹
40. A significant econometric error in Dr. Netz's analysis is in her analysis of the relationship between revenue and winning percentage. If unobserved factors (which I will summarize as "tradition") affect both revenue and winning percentage, then the estimated effect of winning percentage on revenue is biased upwards, and thus Dr. Netz's MRP estimates are again biased upward. It is possible to test for the presence of "tradition" by including a fixed effect for each school in Dr. Netz's revenue regression and performing a Hausman specification test.⁶⁰ When fixed effects are included

⁵⁷ See, e.g., Andrew Zimbalist, "Salaries and Performance: Beyond the Scully Model," in *Diamonds are Forever: The Business of Baseball*, Paul Sommers, ed., The Brookings Institution, 1992, p. 119. Professor Scully states that to obtain player net MRP, "the compensation to other inputs and firm specific training or player development costs need to be subtracted" (Scully, 1974, p. 922).

⁵⁸ In the basketball win-loss equation, Dr. Netz includes an index based on the team's ranking in the previous seasons and a variable for the number of games televised. In the football win-loss equation, Dr. Netz includes average attendance per game and within-conference ranking in the previous season. These variables are inadequate controls for the non-player inputs that affect team performance.

⁵⁹ A study that compares MRPs based on the Scully method to MRPs based on the salaries of baseball free agents finds that the Scully method overstates MRPs by a factor of 4 to 5 (Anthony Krautmann, "What's Wrong with Scully-Estimates of a Player's Marginal Revenue Product," *Economic Inquiry* 37, 1999, pp. 369-381).

⁶⁰ Jerry Hausman, "Specification Tests in Econometrics," *Econometrica* 46, 1978, pp. 1251-1271.

the estimated effect of winning percentage on revenue is significantly lower for both football and men's basketball, and the Hausman test rejects the regressions that do not include fixed effects. Thus Dr. Netz's results are biased and unreliable. For illustrative purposes I calculate the MRPs implied by the fixed effects model, noting that using fixed effects does not correct for the other errors and biases I have discussed above. I find that when this single error is corrected, approximately 80% of football players, and 40% of men's basketball players, have estimated MRPs that are less than the value of a GIA.

IV. Economic Efficiency Effects of NCAA Rules

A. NCAA Rules and Benefits to Consumers

41. The NCAA financial aid rules, together with its other rules defining the nature of its games, allow for the creation and enhancement of the intercollegiate athletics product ("college athletics"). The college athletics product is a product differentiated from other mass consumer athletics products, e.g. professional athletics such as NFL football, major league baseball, or NBA basketball and their respective minor leagues. Plaintiffs do not contest that the NCAA products of DI-A football and DI men's basketball should be organized as amateur, rather than professional, competitions. Professor Noll agrees with this assessment.⁶¹ As I show more comprehensively below, the NCAA's college athletics product has been highly successful with consumers with increasing in-person attendance as well as increasing viewership, both in absolute terms and relative to other athletics products.

⁶¹ Noll Report, p. 103: "I assume here that amateurism adds to the success of college sports." Professor Noll's agreement with amateur sports seems inconsistent with his claim that "the relevant market structurally would be highly competitive in the absence of a common agreement among the member schools to abide by NCAA rules." Noll Report, p. 69. A competitive market with bidding for the most highly skilled athletes is inconsistent with amateur sports, so the product at issue would no longer exist.

42. The NCAA's rules distinctly define the differentiated product of college athletics. The rules, especially the financial aid rules such as the GIA Rule, effectively draw the line between professional and amateur athletics and furthermore, the rules connect colleges to athletics, a product model that has been highly successful with consumers of athletics products.⁶² In particular, the NCAA's rules endeavor to promote differentiation from other athletics products on the following dimensions:

- a. **Students as athletes.** The players are students first, athletes second. The NCAA has passed a series of rules to promote this concept.⁶³ The SAs are, importantly, in college to get an education. Therefore, the SAs cannot be paid cash for play. Since they are talented student athletes, they receive compensation in the form of a college education, subsidized by the GIA and other allowable aid and benefits. Because they are not explicitly paid for playing, they are distinctly amateur athletes.⁶⁴
- b. **College teams.** The teams are affiliated with colleges and universities which are, foremost, academic institutions rather than profit-maximizing professional teams. The NCAA has passed a number of rules that limit teams' profit-seeking activities.⁶⁵ These colleges and universities are not, because they cannot be, in the primary business of making money from college athletics. The administrations of these colleges and universities face a number of competing interests, only one of which is college athletics. Thus the colleges and universities cannot create a profit maximizing price and pay structure that a professional team endeavors to

⁶² Professor Noll claims that the AAU (p. 104) can be used as a standard to assess the NCAA rules. AAU athletes do not receive college scholarships. Also, to the best of my knowledge AAU sports are not particularly popular with fans, e.g. AAU basketball. Further, numerous books and articles have been written on the high level of corruption and violation of rules that occurs within AAU basketball. See *United States v. Myron C. Piggie*, pp. 1-5. I conclude that the NCAA is in fact a distinct form of amateurism, different from AAU and other examples such as amateur golf, because it combines college attendance and athletics, which leads to significant student, alumni, and general interest which AAU sports do not have.

⁶³ NCAA Constitution, Articles 1.3.1, 2.5, and 2.9; NCAA Bylaw 23.01.1.

⁶⁴ Brand Dep., p. 58:17-58:23; Byers Dep., pp. 48:7-49:3, 55:5-55:11; Berst Dep., pp. 144:11-144:20, 216:7-216:11.

⁶⁵ Bylaws 6.4, 11.3, 12.5, 2007-08 NCAA Manual.

have. Again, as with the students, these teams are distinctly amateur since they are not profit maximizing professional teams.

- c. **Competitive balance among teams.** The teams' chances of winning games do not always seem extremely high or low. The NCAA has passed rules with the goal of maintaining competitive balance among the college athletics teams, including its financial aid rules at issue here.⁶⁶ The rules seek to decrease differences in budgets among teams; there is a system of revenue sharing among the NCAA schools. They cannot pay large amounts to get the best players. Similarly, they cannot pay extraordinary amounts for other SA-related expenses such as travel, meals, etc. The NCAA's rules allow for smaller, less wealthy schools to stay in competition. Occasionally, as I point out below, some of these schools, like Boise State, George Mason, and Gonzaga, accomplish major upsets which has the effect of making competition more exciting for consumers.
43. As plaintiffs themselves point out, "Major College Football and Major College Basketball are uniquely American and are commercially and economically distinct from professional and non-college sports."⁶⁷ I find that the "distinct" product exists in its current and successful form due to the NCAA's rules, including the GIA Rule, which restricts "pay for play." Without rules of this type, the distinction between professional and amateur college athletics would be blurred. Consumers would be harmed by the decrease in differentiation in the athletics market.⁶⁸

⁶⁶ NCAA 351451-351496; NCAA 405233-405246; NCAA 405597-405604; NCAA 003671-003702; NCAA 245425-245543; NCAA 245895-245896; NCAA 273778-273781; NCAA 281936-281939; NCAA 342524-342528.

⁶⁷ Second Amended Complaint For Violation of Section 1 of the Sherman Act, 15 U.S.C. § 1 ("Plaintiffs' Complaint"), ¶ 1.

⁶⁸ Of course, as any economist knows, the fact that products are differentiated does not by itself suggest that they are in separate relevant markets. I have written numerous academic papers on differentiated products that discuss this question of market definition and consumer benefit from increased product differentiation. The report of Professor Willig will address the proper definition of the relevant markets.

B. The Economic Efficiency of the GIA Versus the COA

44. My review of the Plaintiffs' Complaint indicates that the plaintiffs are not necessarily challenging the existence of a financial aid limit. Rather, they only challenge the exact amount of the limit; plaintiffs seem to indicate that the COA Rule is appropriate rather than the GIA Rule.⁶⁹ From an economic point of view, the relevant questions are then:

1. Which is better: the GIA Rule or COA Rule?
2. Who should decide between the GIA Rule and COA Rule?

1. Which is better: the GIA or COA?

45. The correct economic approach for evaluating the GIA Rule against the COA Rule is to apply the concept of economic efficiency. Given a certain budget, the decision to provide scholarships valued at the COA rather than GIA is a resource allocation problem between two sets of students: SAs and non-SAs.⁷⁰ The definition of economic efficiency is given by a well-known undergraduate economics textbook by Robert Pindyck and Daniel Rubinfeld: "In an efficient allocation of goods, no one can be made better off without making someone else worse off."⁷¹ The GIA Rule is an efficient allocation since moving to the COA Rule would require taking funds away

⁶⁹ See Plaintiffs' Response to NCAA's Interrogatory No. 22: "Plaintiffs in this action are not challenging amateurism in college sports"; Plaintiffs' Reply Memorandum of Points and Authorities in Support of their Renewed Motion for Class Certification, p. 17:3-4, 17:13-15: "Plaintiffs are explicitly not arguing for a but-for world in which market price governs. . . . However, plaintiffs agree that, absent the GIA cap, the NCAA could limit all GIAs to the COA based on their interest in preserving the amateur character of college sports"; Plaintiffs' Memorandum of Points and Authorities in Opposition to Defendant NCAA's Motion to Dismiss Plaintiffs' Complaint, p. 14:1-3: "[P]laintiffs do not claim that the elimination of the GIA cap would result in their receipt of salaries or other market-based compensation in excess of the total cost of attending school." In actuality the distinction is not between only the GIA and COA because the NCAA has in place a system of "GIA PLUS" which could cover COA if the schools chose to use available aid to benefit football and men's basketball players. In the following discussion, my references to the "GIA" are to both the GIA and GIA PLUS. To the extent that in the but for world plaintiffs would receive scholarships valued at cost of attendance as a starting point and then add existing forms of aid on top, student athletes would be receiving payment for attending college. This outcome would be inconsistent with the NCAA's brand of college athletics.

⁷⁰ Professor Noll attempts to describe a tradeoff between SAs and coaches, but as I explain above, his claim is incorrect.

⁷¹ Robert S. Pindyck and Daniel L. Rubinfeld, *Microeconomics*, Sixth Edition, Pearson Prentice Hall, 2005, p. 584.

from non-SAs and giving these funds to SAs, which would make the SAs better off and the non-SAs worse off. In this sense, the increase to COA is a pure wealth transfer from non-SAs to SAs, especially when no positive output effects would occur as I explained above. Colleges must act subject to budget constraints which yields the “no free lunch” outcome in economics.

46. Plaintiffs may disagree by stating that the NCAA and its member institutions receive sufficient funds from television and tickets such that they could easily increase aid to SAs up to the COA without affecting the non-SAs. However, I find that the plaintiffs would be incorrect in this conclusion. The NCAA redistributes television revenues among its member institutions.⁷² Even after this redistribution, a significant proportion of member institutions lose money on their Division I-A football and Division I men’s basketball programs, and many lose money on their athletics programs overall.⁷³ Thus most member institutions could not provide more funds to the SAs up to COA without reducing funds allocated to the non-SAs.
47. The move to COA would also be inefficient since it would likely negatively impact SAs in sports other than DI-A football and DI men’s basketball. In order to make the COA threshold, schools would have an incentive to cut players and/or sports within the limits of Title IX requirements.⁷⁴
48. The move to COA would also be inefficient if it led to some schools cutting DI-A football and/or DI men’s basketball altogether. For example, in the past years, there have been examples of schools who have left Division I

⁷² See NCAA, “2006-7 Revenue Distribution Plan,” www.ncaa.org, downloaded August 28, 2007.

⁷³ National Collegiate Athletic Association, “2002-03 NCAA Revenues and Expenses of Divisions I and II Intercollegiate Athletics Programs Report,” February 2005, http://www.ncaa.org/library/research/i_ii_rev_exp/2003/2002-03_d1_d2_rev_exp.pdf, downloaded August 31, 2007.

⁷⁴ Meyer Dep., pp. 45:21-46:20; 71:7-72:21; Leland Dep., pp. 78:1-79:10; Berst Dep., pp. 197:4-197:17; 198:7-198:16; 217:3-217:10; Toldeo Dep., pp. 83:25-85:4; 99:10-100:20; Brand Dep., pp. 134:7-134:18; 242:14-244:8; 254:3-256:6; Foley Dep., pp. 45:23-46:16; 52:25-53:8. Professor Noll appears to ignore budget constraints and Title IX requirements. Dr. Netz does recognize that Title IX “greatly increased the costs of maintaining football and men’s basketball teams.” Netz Report, p. 16. My understanding of Title IX is that an increase to COA based scholarships for football and men’s basketball SAs would lead to similar increased costs for other sports. Professor Noll disregards this significant budget constraining effect.

rather than putting up with the additional significant costs of running Division I programs.⁷⁵ These developments would be negative not only for the SAs involved but also for consumers of college athletics since the marginal teams likely add to greater overall consumer interest in the games. Also, as I explained above, there has been a significant output increase by colleges joining Division I. Higher costs would cause fewer schools to join Division I and would lead to an output decrease.

49. Furthermore, the move to COA would be inefficient since the GIA is a clearer line relative to the COA. The GIA is a relatively clear line which the NCAA defines as “tuition and fees, room and board and required course related books.”⁷⁶ These items are characterized by standardized definitions across schools, limited variance across students at a given school, and easy verification of the expenses. For example, tuition, fees, and room and board are typically billed directly from the university to the student such that reimbursements can directly offset the bill. Books are often provided with no money changing hands, for example on a voucher system.⁷⁷
50. In contrast, the COA consists of a hodgepodge of additional items such as “supplies, transportation, loan fees...dependent care” and includes a category of “miscellaneous expenses.”⁷⁸ The categories of included expenses vary widely across, and even within, schools. They can also be adjusted by schools within limits in response to perceived competition, e.g. housing can be set higher or lower depending on whether school wants to be

⁷⁵ Hansen Dep., p. 76:16-76:25; Toledo Dep., pp. 85:22-86:14. For example, Birmingham Southern College moved from Division I to Division III for financial reasons. See Baseball America, “Birmingham Southern Headed To Division III,” www.baseballamerica.com, June 7, 2006.

⁷⁶ NCAA Division I Bylaw 15.02.5.

⁷⁷ H

⁷⁸ “The COA includes tuition and fees; on-campus room and board (or a housing and food allowance for off-campus students); and allowances for books, supplies, transportation, loan fees, and, if applicable, dependent care. It also includes miscellaneous expenses, including an allowance for the rental or purchase of a personal computer. Costs related to a disability are also covered. The COA includes reasonable costs for eligible study-abroad programs as well. For students attending less than half time, the COA includes only tuition and fees and an allowance for books, supplies, transportation, and dependent-care expenses.” U.S. Department of Education, “Funding Education Beyond High School: The Guide to Federal Student Aid 2007-2008,” http://www.studentaid.ed.gov/students/publications/student_guide/2005-2006/english/important-terms.htm, downloaded August 9, 2007.

seen as high priced or low priced.⁷⁹ These other expenses would likely be paid directly by the student such that they could vary greatly across the students; furthermore, the verification of the expenses could be difficult for students, schools, and the NCAA, and, thus, more costly for all involved. The students would have to keep receipts, the schools would have to verify and process those receipts, and, where questions arose, the NCAA would have to rule on whether receipts for certain types of expenses (e.g. dry cleaning as “laundry”) qualify for reimbursement. Given the greater economic costs to all parties, I find that a move to COA would be inefficient.⁸⁰

51. Thus I find that an economic analysis of the GIA compared to the COA does not favor the COA, given the starting point of the GIA. GIA is a well-defined, accepted, bright line base grant with a system of need-based and education-based additional allowances for the specific needs of SAs. Furthermore, the GIA Rule helps to preserve amateurism by maintaining the discussion between prospective SAs and recruiters at the level of the needs of a college education rather than about remuneration. Since the COA Rule includes elements that are not as closely tied to the costs of a college education (e.g. laundry money or other personal expenses, which would be incurred regardless of whether a person is in or out of college are also more subjective and less well-defined), the COA Rule would introduce discussions of the amount of compensation, which would in turn harm the concept of amateurism.

2. Who should decide between the GIA and COA?

52. The NCAA is an organization of member institutions, or the producers, of college athletics. As I have explained above, the NCAA seeks to increase, and has increased, consumer surplus by creating and maintaining the

⁷⁹ Lynn Holzman Dep., pp. 117:17-118:7, 118:25-124:11; Leland Dep., pp. 120:12-121:16.

⁸⁰ I understand that COA is loosely defined in the relevant statute, which the Department of Education (DOE) is forbidden by Congress from regulating, so there is much flexibility and little oversight. For example, schools can allow for interstate travel by air, by bus, or only local travel in computing COA.

differentiated product of amateur college athletics through its rules. The creation and maintenance of that product also increases producers' surplus, since only with a sellable product to consumers can the member institutions receive ticket revenues and bargain with media outlets to receive royalty revenues. The NCAA also limits free riding of schools by requiring they follow the rules and thereby maintain the college athletics product instead of, for example, using unscrupulous methods of recruiting players which would damage the product.

53. As a collective organization, the NCAA is also an effective clearinghouse for information about each member institution, student athletes, and the brand image of the NCAA college athletics product. As such, it has undertaken extensive research on the current and future well-being of SAs, as well as schools, and conducted studies on the perception of the NCAA.⁸¹ This ongoing research and development role is an economically well-documented benefit of joint ventures such as the NCAA.⁸² Professor Noll recognizes the potential efficiency effects of standard-setting organizations, and I agree they can have important pro-competitive effects.⁸³
54. The other question is whether plaintiffs have provided a more economically efficient alternative. I find that plaintiffs have not provided a more efficient alternative to the NCAA in setting the financial aid limit. Plaintiffs claim that an unregulated competitive process would lead to a better outcome for the players in which they would receive a scholarship value at COA rather than the GIA.
55. However, the plaintiffs' claim has several problems. First, historical and current outcomes suggest that an unregulated competitive recruiting process would lead to aid far in excess of the COA.⁸⁴ In terms of historical evidence, prior to the GIA Rule, there were numerous scandals involving

⁸¹ For example, "Public Perception Report," September 2005; NCAA 417207-417254; NCAA 417307-417324; NCAA 417171-417195.

⁸² For a discussion, see Jean Tirole, *The Theory of Industrial Organization*, MIT Press, 2002, pp. 413-414.

⁸³ Noll Report, p. 17.

⁸⁴ Dr. Netz's results demonstrate that competition for star players would lead to high payments to them. Netz Report, pp. 42-43.

payments to SAs far in excess of costs related to attending college.⁸⁵ In terms of current evidence, the professional model demonstrates that some athletes receive extremely high salaries, while others never make it to the pros, or make it and are paid far less than the top professionals. Second, such payments would damage the NCAA college athletics product, which would lead to less consumer and producer surplus. Third, as previously mentioned, many SAs could be injured by having no sports and no scholarships, which would also result in lower output. Thus I find that while it may be true that an unregulated openly competitive process may lead to better outcomes for some players, it is economically inefficient since it will likely lead to worse outcomes for many other players, the schools, and consumers.

V. Pro-competitive Effects of the NCAA's Rules

56. As I have explained above, the NCAA's rules are necessary for the creation and maintenance of the collegiate model which produces the college athletics product. In this section, I demonstrate that the college athletics product has been a significant success with consumers, adding to consumer welfare. First, I discuss the evidence for increased output, including attendance and viewership of college athletics games. Second, I discuss the evidence for increased competitive balance.

57. I find that there are no adverse effects on output from the GIA Rule or the NCAA rules generally. The rules do not lead to a restriction of the availability of the product, college athletics, to consumers. In fact, I show below that the opposite is true: that output has been enhanced by the NCAA's rules.

⁸⁵ Brand Dep., pp. 59:18-60:7; Hansen Dep., pp. 82:23-83:11; Seattle Post Intelligencer, "UW may face severe sanctions from NCAA," February 13, 2004; 4malamute.com, "Scandal In The Fifties Torrance and Cassill carried the torch for Washington," March 8, 2002.

58. My analysis of the effects of the NCAA's rules on attendance focuses on the effects of the reductions of the limits on the total number of GIA scholarships that Division I members could award in the early to mid 1990s. The NCAA phased in reductions in the number of GIA scholarships that DI-A football and DI men's basketball teams could provide to SAs annually. As discussed below, this so-called initial "cost reduction" measure, similar to the "cost reduction" effect of the GIA Rule, was intended to, and has led to, greater competitive balance and greater market output.
59. Both DI-A football and DI men's basketball are headcount sports; this means that the limits refer to the number of SAs receiving any "countable aid" rather than scholarship equivalencies. Thus 85 counters for football refers to 85 team members receiving some form of athletics-based aid, the amount of which could be less than the full GIA. In other words, the limits apply to SAs with partial scholarships.
60. Although my analytic focus in this section is on the scholarship limits, my review of the NCAA documents indicates both the GIA Rule and the scholarship limits stemmed from the same concern by the NCAA members for competitive balance.⁸⁶ Both rules were part of a set of NCAA rules designed to promote competitive balance among relatively wealthy as well as less wealthy institutions since they both limit expenditures by the institutions. Without such rules, there would have been more examples of schools like Alabama essentially hoarding talent.⁸⁷ This behavior would have resulted in less entry into DI and more teams exiting from DI rather than the significant net entry during the past ten years.
61. Thus I find that the scholarship limit represents the effects of the GIA Rule on both competitive balance and output.

⁸⁶ NCAA 039309-039394; NCAA 041359-041406.

⁸⁷ University of Nebraska also regularly had a large roster in the 1970s. The Sporting News, "Don't write off Solich yet - Insider: college football," December 30, 2002. See also Augusta Chronicle, "Leveling The Field As Upstart Programs Pull Off Shocking Upsets, Will Football's Traditional Powerhouses Permanently Fall By The Wayside?" August 24, 2001; St. Petersburg Times, "Assistant coaches feel recruiting heat," January 29, 2002; Birmingham News, "Football Coaches Fear Loss Of Scholarships," June 6, 1993; Knoxville News-Sentinel, "College Coaches Feel Scholarship Cuts To The Bone," August 12, 1995.

62. For DI-A football, the limit was reduced from a maximum of 95 full GIA scholarships to 92 in the 1992-93 academic year, 88 in 1993-94, and 85 in 1994-95.⁸⁸ For DI men's basketball, the limit was reduced from a maximum of 15 full GIAs to 14 in 1992-93 and 13 in 1993-94.⁸⁹ Thus for both DI-A football and DI men's basketball, the final limits were effective in the year 1994 since football takes place in the fall, and basketball in the spring. I examine the effects of these limits on both attendance and viewership and find that both increased after the limits took effect.

A. Output: Attendance

63. **DI-A Football.** I examined total aggregate attendance for conferences of both Division I-A and Division I-AA football during the period 1983-2006.⁹⁰ I am interested in the contrast between the two subdivisions.⁹¹ As I discuss above, the rule change I am analyzing is the final 1994 limit. In Division I-A, the limits were reduced to 85 total scholarships. In Division I-AA, the limits were reduced to 85 total and 63 equivalencies.

64. The 1994 scholarship limits can be expected to affect attendance after a four-year lag, in 1998, since a recruiting class lasts four years. The increased rate of Division I-A football attendance from 1998 forward demonstrates that the output market, the consumer market in which college football competes, experienced increased demand as a result of the NCAA's scholarship limit change. Furthermore, I also find an increase from 1994 forward. Thus while an increase from 1998 forward is sufficient for my analysis, I find more than sufficient evidence with an increase from 1994 forward as well. The results contrast with those of Division I-AA, where the imposed limits were less constraining than for Division I-A, and in

⁸⁸ NCAA 024345-024831 at 024537; NCAA 024832-025323 at 025028; NCAA 025324-025849 at 025536.

⁸⁹ NCAA 024345-024831 at 024538; NCAA 024832-025323 at 025029.

⁹⁰ The sources for the data were the NCAA Football Record Books. National Collegiate Athletic Association, "Official 2006 NCAA Division I-A and I-AA Football Records Book," August 2006, p.408; National Collegiate Athletic Association, "2006 National College Football Attendance," www.ncaa.org/stats/football/attendance/2006/2006_football_attendance.pdf, downloaded August 30, 2007.

⁹¹ DI-AA was only established in 1978. Through 1982, there was significant reshuffling among divisions: 42 colleges exited DI-A football between 1978 and 1982.

which attendance grew at the same rate as that prior to 1994 or 1998. These results show that there was no competitive harm in the output market due to the rule change, but rather that the rule change resulted in a pro-competitive output enhancement.

65. The main question in terms of the output market: did the rule change result in greater quality, and therefore greater demand, for the product, college football? I find that it did, which is reflected in the fact that attendance in Division I-A grew at a faster rate from 1998 forward after the rule change than prior to the rule change, as contrasted with Division I-AA, which did not grow at a faster rate. I find similar results for before and after 1994.
66. The attached graph, Exhibit D, "Football Attendance Division I-A and I-AA," shows that total attendance for I-A was relatively flat through approximately 1990, then began increasing in about 1991, and finally, the rate accelerated in the 1994 and later period. From 1983 to 1997, attendance increased by 9%, while attendance increased at a higher rate of 33% from 1998 to 2006. Relative to 1994, between 1983 and 1993, while attendance decreased slightly by 0.3%, between 1994 and 2006 after the limits, attendance grew 44%.
67. I find that the scholarship limits had a greater binding effect on I-A than I-AA.⁹² Thus I compared the results to those for I-AA which should have experienced a lesser or no impact from the rules. The graph shows that Division I-AA attendance was relatively flat for much of the period.⁹³ Between 1983 and 1997, attendance increased 7% but only 3% from 1998 to 2006. Relative to 1994, attendance decreased in the 13 year period between 1994 and 2006 by 8% in contrast to the prior 11 year period between 1983 to 1993 during which attendance grew 10%.⁹⁴

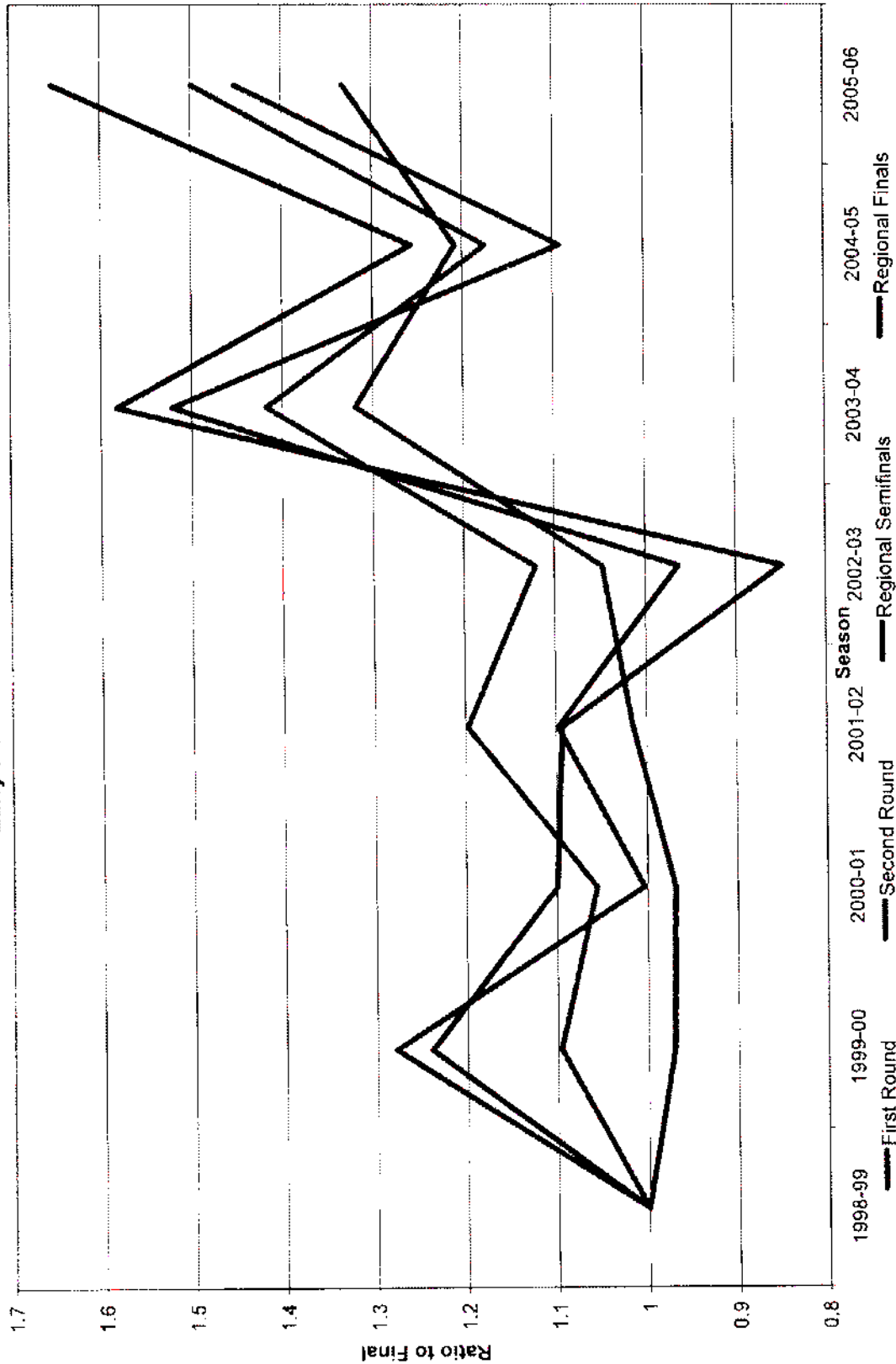
⁹² During the period 1999 to 2005, an average of approximately 24% of DI-AA football teams had equivalencies of 60 or more (63 is the limit), whereas 41% of DI-A football teams had equivalencies of 80 or more (85 is the limit). GIA Report.pdf.

⁹³ Division I-A and I-AA were formed about 1978; limits in Division I were reduced in 1975 from 105 to 95 in football and 18 to 15 in men's basketball.

⁹⁴ National Collegiate Athletic Association, "Official 2006 NCAA Division I-A and I-AA Football Records Book," August 2006, p. 408; National Collegiate Athletic Association, "2006 National College Football

Exhibit F

Division I Basketball
Average Annual Tournament Game Viewership
Early Rounds vs. Finals¹



¹ All ratios are indexed to 1 in the 1998-99 season.
Sources: 1998-99 Men's Basketball.pdf; 1999-00 Men's Basketball.pdf; 2000-01 Men's Basketball.pdf; 2001-02 Men's Basketball.pdf; 2002-03 Men's Basketball.pdf; 2003-04 Men's Basketball.pdf; 2004-05 Men's Basketball.pdf; 2005-06 Men's Basketball.pdf; E-mail from Greg Weitekamp, July 10, 2007.

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68. These results demonstrate that the output market was not harmed by the scholarship limits implemented by the NCAA. On the contrary, they are evidence that the product improved since quantity demanded increased.
69. **DI Basketball.** I find similar results for men's basketball. Exhibit E shows DI men's basketball attendance compared to Division II ("DII") men's basketball attendance. Like DI-AA for football, DII serves as an effective control group for DI men's basketball since the limits were less binding on DII than for DI.⁹⁵ Since 1994, DII attendance has decreased 10% while DI attendance has increased 19%.⁹⁶ Thus similar to the football results above, these results for men's basketball show that the imposition of more restrictive limits on DI men's basketball led to higher attendance to DI men's basketball games, revealing consumer preferences for the DI men's basketball product.
70. **Championships attendance.** Consumer preferences for the NCAA's DI-A football and DI men's basketball products are also demonstrated by the significant success of the end of season championship games for both sports: the bowl games for DI-A football and the NCAA tournament for DI men's basketball.
71. Bowl games have been a consumer success by almost every measure. First, the number of bowl games has more than tripled since 1970 from 11 to 32. Since the scholarship limits were put into place in 1994, the number has increased 68%, and since 1998, when the limits might reasonably affect attendance after a lag due to the four-year duration of a recruiting class, their

Attendance," www.ncaa.org/stats/football/attendance/2006/2006_football_attendance.pdf, downloaded August 30, 2007.

⁹⁵ Between 1999 and 2005, an average of approximately 49% of DI men's basketball teams had equivalencies of 12 or more (13 is the limit), whereas 36% of DII men's basketball teams had equivalencies of 9 or more (10 is the limit). DII MBB GIA 2004-2006.pdf; DII MBB GIA 1999-2003.pdf; GIA Report.pdf.

⁹⁶ National Collegiate Athletic Association, "Official 2007 NCAA Men's Basketball Records Book," November 2006, p. 240; National Collegiate Athletic Association, "2007 National College Basketball Attendance," www.ncaa.org/stats/m_basketball/attendance/2007_basketball_attend.pdf, downloaded August 28, 2007.

number has increased 45%.⁹⁷ Since bowl games have significant costs – the payouts to teams alone currently account for approximately \$200 million -- their creation and significant increase in number demonstrate a market reaction to greater demand for bowl games.⁹⁸ Second, the demand itself is demonstrated by the significant increase in the attendance at bowl games. Attendance has increased 173% since 1970, 60% since 1994 and 39% since 1998. Thus both the numbers of bowl games and the attendance show significant increases in output.

72. The same is also true of the DI men's national championship basketball tournament, with the NCAA successfully marketing not only the tournament itself but also specific rounds such as the Final Four. Attendance for the tournament has increased 375% since 1970, 21% since 1994 and 5% since 1998. Average attendance per game has also increased: 117% since 1970, 17% since 1994, and 2% since 1998.⁹⁹ The average attendance for the DI men's basketball tournament contrasts with the NIT tournament average attendance which has decreased over all three periods: 64% since 1970, 22% since 1994, and 31% since 1998.¹⁰⁰ These results demonstrate the absolute and relative success of the NCAA's DI men's basketball tournament product.

73. **Viewership.** Data on television viewership also demonstrate the increased consumer response to the NCAA rule changes. I first examine viewership for the bowl games. As I mentioned previously, I believe there is a lag period of approximately four years before the effects of the scholarship

⁹⁷ National Collegiate Athletic Association, "Official 2006 NCAA Division I-A and I-AA Football Records Book," August 2006, p. 293; National Collegiate Athletic Association, "2006 National College Football Attendance," www.ncaa.org/stats/football/attendance/2006/2006_football_attendance.pdf, downloaded August 30, 2007.

⁹⁸ National Collegiate Athletic Association, "Financial Review of 2006-07 Postseason Bowls," www1.ncaa.org/membership/postseason_football/2006-07/5_yr_summary_GR.pdf, downloaded August 30, 2007.

⁹⁹ National Collegiate Athletic Association, "Official 2007 NCAA Men's Basketball Records Book," November 2006, p. 242; National Collegiate Athletic Association, "2007 National College Basketball Attendance," www.ncaa.org/stats/m_basketball/attendance/2007_basketball_attend.pdf, downloaded August 28, 2007.

¹⁰⁰ NIT avg attendance_CKD.pdf; 306ATTENDANCE.pdf; 2007 Scores and Attendance.pdf, Metropolitan Intercollegiate Basketball Association, "65th Annual National Invitation Tournament," 2002.

limits are fully reflected in the data. Thus I examine data from the 1998-99 football season forward. During that period, the number of households watching has increased 14%.¹⁰¹

74. I also examined television viewership data for the DI NCAA men's basketball tournament. Specifically I look at the viewership for the men's basketball tournament. When I examine viewership data for the DI men's basketball tournament, I find that relative to the viewership for the finals, viewership for the first and second rounds relative to the final round has increased 65% and 45%, respectively, since 1999. I find similar results for the regional semifinals and finals; relative to the viewership for the finals, they have increased 50% and 33%, respectively, since 1999.¹⁰²
75. The early rounds and regional semifinals and finals are important in considering the effects of the NCAA's rules on both output and competitive balance. As I have explained above, the rules have allowed for entry into DI-A football and DI men's basketball. Entry can reasonably be expected to be by relatively minor teams who are most relevant in the earlier rounds and regionals. Thus, I find an increase in output in the particular TV markets that Professor Noll considers.¹⁰³ This increase in output demonstrates the pro-competitive effect of the NCAA changes in rules.

B. Competitive Balance

76. **Importance of competitive balance.** As a major part of creating a successful and differentiated college athletics product, the NCAA endeavors through its rules to promote a balance of competition across the teams.¹⁰⁴

¹⁰¹ 1998-1999 FB Ratings.pdf; 2005-06 FB Ratings.pdf.

¹⁰² See Exhibit F, which shows that total viewership for the earlier rounds of the men's basketball tournament and the regional semi-finals and finals have increased since 1998. The data have been indexed to "1" in 1998-99 for ease of exposition. In particular, the first round viewership relative to the final round ("First Round") has increased significantly. 1998-99 Men's Basketball.pdf; 1999-00 Men's Basketball.pdf; 2000-01 Men's Basketball.pdf; 2001-02 Men's Basketball.pdf; 2002-03 Men's Basketball.pdf; 2003-04 Men's Basketball.pdf; 2004-05 Men's Basketball.pdf; 2005-06 Men's Basketball.pdf; E-mail from Greg Weitekamp, July 10, 2007.

¹⁰³ Noll Report, p. 66.

¹⁰⁴ NCAA Constitution, Article 2.10, The Principle of Competitive Equity: "The structure and programs of the Association and the activities of its members shall promote opportunity for equity in competition to

Increasing competitive balance enhances the value of the college athletics product since consumers are more likely to watch a contest with an uncertain outcome rather than one in which the outcome is perceived to be predetermined.¹⁰⁵

77. Even within DI-A, the NCAA governs a diverse set of member institutions, some of whom are financially well-off and others who are struggling. The range in revenues, for example, is from approximately \$5 million to \$90 million.¹⁰⁶ The budget surplus or deficit also ranges widely from negative \$4 million to positive \$20 million.¹⁰⁷ Some schools such as Ohio State, Notre Dame, University of Michigan, and University of Southern California are highly successful and revenue rich, while others such as SUNY Buffalo and University of Houston are very revenue poor.¹⁰⁸
78. In fact, many DI-A football and DI men's basketball programs are losing money on a standalone basis. According to EADA data from 2003, approximately 28% of all DI-A football programs and 47% of DI men's basketball programs are in deficit.¹⁰⁹ In fact, this situation is true even though many programs receive payments or subsidies from other parts of the

assure that individual student-athletes and institutions will not be prevented unfairly from achieving the benefits inherent in participation in intercollegiate athletics."

¹⁰⁵ In his consideration of competitive balance, Professor Noll does no analysis but instead refers to previous studies. To support his claim that "Empirically, considering data over the past fifty years, the restrictions that the NCAA has imposed appear to have made competitive balance worse in terms of persistence," he refers to a 1998 paper by E. Woodrow Eckard (Noll Report, fn. 106). Eckard considers the effect of "effective NCAA enforcement" starting in 1952 by comparing competitive balance in the 25 years prior to 1952 and the 25 years after 1957. There are several problems with Professor Noll's reliance on this study. First, it is difficult to know what Eckard's tests are measuring since he considers two periods characterized by very different structures of major college football. Prior to 1954, the Ivy League schools had major football programs but began to deemphasize football around 1954. Thus the structure of competition in major college football changed. Eckard's test may be picking up the effects of these structural changes instead of, or in addition to, any of the enforcement effects he considers. Second, Eckard considers enforcement effects rather than rule effects. Third, Eckard considers enforcement of rules prior to either GIA limits or scholarship limits, which are relevant for this case. In fact, the pay for play type scandals that I mention above continued to occur after 1952.

¹⁰⁶ National Collegiate Athletic Association, "2002-03 NCAA Revenues and Expenses of Divisions I and II Intercollegiate Athletics Programs Report," February 2005, p. 35.

¹⁰⁷ National Collegiate Athletic Association, "2002-03 NCAA Revenues and Expenses of Divisions I and II Intercollegiate Athletics Programs Report," February 2005, p. 41.

¹⁰⁸ National Collegiate Athletic Association, "2002-03 NCAA Revenues and Expenses of Divisions I and II Intercollegiate Athletics Programs Report," February 2005, pp. 35-41; U.S., Department of Education, "Equity in Athletics Data Analysis (EADA) Cutting Tool Website," <http://ope.ed.gov/athletics/>, downloaded August 31, 2007.

¹⁰⁹ EADA.dta

university such as institutional support or state funding. If I subtract institutional support, 34% of DI-A football programs and 68% of DI men's basketball programs are in deficit. Although insufficient data exist to account for the effects of state funding, the rate of deficit programs would be even higher without these sources of funding. Professor Noll emphasizes the revenues for the large conferences, but he completely ignores the schools and conferences without "big time" sports that earn much lower revenues and typically run a deficit on their sports programs.¹¹⁰

79. The NCAA has sought to pass a number of rules, including those related to financial aid like the GIA Rule, in order to allow for these marginal programs to compete. Limits on expenditures across the programs allow the marginal programs to keep up with their competitors. It has also allowed schools to enter and remain in DI-A football and DI men's basketball. Since 1994, there has been entry into DI-A football of 14 schools (13%) and into DI men's basketball of 30 schools (10%). These programs have increased output and contributed to competitive balance, as I show below.
80. With an increase from the GIA Rule to the COA Rule, since many of the programs are already in deficit or breaking even, marginal programs may be forced to exit DI-A or DI altogether. Other colleges who planned to enter DI-A football or DI men's basketball may decide to forgo entry because of the higher costs. Alternatively, schools may eliminate other sports. These developments would be negative for competitive balance and, likely, for output as well. Furthermore, the effects would likely be felt not only in DI-A football and DI men's basketball, but also in a wide range of other sports, particularly women's sports. Such a development would be negative for consumer welfare.
81. **Evidence for competitive balance.** I have examined various measures of competitive balance and have concluded that the NCAA's rules have likely contributed to increased competitive balance among the school teams that make up DI-A football and DI men's basketball.

¹¹⁰ Noll Report, p. 94.

82. **DI Basketball.** First, I examine the DI men's basketball tournament.¹¹¹ I find that in the season ending men's basketball tournament, competitive balance has increased by a statistically significant amount since the scholarship limits were enacted that finally reduced the number of men's basketball scholarships to 13 in 1994, taking into account the four-year lag as discussed above.¹¹² The men's basketball tournament is a good experiment to test the effects since its format has not changed since 1985 except for the addition of a "play-in" game.¹¹³ An original 64 teams play six rounds until a champion wins the tournament. All NCAA teams are invited to participate in the tournament.
83. For my statistical analysis I analyze the first four rounds. I choose the first four rounds because in each bracket 16 teams are seeded and they play in one of four brackets (60 games). In the last two rounds (only 3 games) teams from different brackets play each other so the seedings are not strictly comparable. The basic unit of my analysis is to calculate the probability that an underdog wins, where an underdog has a lower seeding than the team it beats.¹¹⁴ However, the probability of the underdog winning varies across rounds. For example, the probability of an underdog winning is higher in the second round than the first round because in the first round Seed 1 plays Seed 16 and the underdog has never won this matchup. In the second round the teams are more evenly matched on average, so I would expect a greater proportion of upsets.
84. My statistical analysis considers two periods: the before period and after period. For the before period I used the thirteen years of 1985-1997 since the final rule change was in 1994. I wait for four years to let the effect of the rule come completely into effect since a recruiting class lasts for four

¹¹¹ Professor Noll states he is aware of no studies for college men's basketball. I am not aware of previous studies.

¹¹² The number of scholarships was reduced from 15 to 13 in two steps.

¹¹³ In 2001, an initial game was added in which the winner advances to the round of 64. This change does not impact my analysis. National Collegiate Athletic Association, "Official 2006 NCAA Men's Final Four Records Book," January 2006, p. 77.

¹¹⁴ In rounds 5 and 6 teams with the same seeding often play each other so underdog is not defined. In the first 4 rounds this outcome cannot occur.

years. I then take the after period to be the nine years 1998-2006. I test the null hypothesis of no change in the probability of the underdog winning. The alternative hypothesis is that competitive balance increased in the after period so that the probability of the underdog winning increases.

85. In Table 1 I give the fraction of times the underdog wins in each period as well as the standard deviation calculated under the null hypothesis.

Table 1: Proportion of Time the Underdog Wins

	Round 1	Round 2	Round 3	Round 4
1985-1997	0.2452	0.2837	0.2308	0.3654
1998-2006	0.2569	0.3750	0.3194	0.4444
Diff in means	0.0118	0.0913	0.0887	0.0791
Standard Deviation	0.0332	0.0506	0.0678	0.1061
t-tests	0.354	1.805	1.307	0.745
One-sided p- value	0.362	0.036	0.096	0.228

As Table 1 demonstrates the probability of the underdog winning has increased for each round in the after period. For example the probability that the underdog wins in Round 2 increased from 28.4% to 37.5% for a difference of 9.1 percentage points. This difference is highly significant since the t-test is 1.81 with a p-value of 3.6%. In Round 3 the probability of an upset has increased from 23.1% to 31.9%. Also, the p-value of Round 3 is significant at the 10% level.

86. Since the probabilities differ across rounds and I am using one-sided tests, I now compute a Fisher combination of tests statistic in Table 2.

Table 2: Fisher Combination of Tests

	Rounds 1-2	Rounds 3-4	Rounds 1-4
Fisher Statistic	8.708	7.652	16.360
p-value	0.069	0.105	0.038

Note that the Fisher statistic is significant at the 10% significance level for each combination of rounds. In particular, combining Rounds 1 to 4 leads to a p-value of .038, which is quite low and indicates a high level of statistical significance. Thus, I conclude that the rules changes have lead to an increase in competitive balance in men's basketball.

87. **DI-A Football.** I next examine DI-A football and look specifically at the appearances of "minor" DI-A football teams in the bowl games. One goal of the NCAA is to encourage greater participation, and appearance in bowl games goes together with greater competitive balance.¹¹⁵ In order to determine minor versus major teams, I first use the EADA data to rank the DI-A football teams by revenue and then use the bottom 50% of the distribution in order to define "minor."¹¹⁶
88. I compare the percent of bowl game appearances by minor teams ("percent minor appearances") before and after the scholarship limit changes. I first compute the average percent minor appearances in the four years preceding the last scholarship limit change, 1990-1993: 17.4%. I then compare this average to the average percent minor appearances in the last four years of the data, 2003-2006: 36.4%. Thus the percent minor appearances has more than doubled between the two periods. More precisely, the percent minor appearances has increased by a factor of 2.1 (36.4% divided by 17.4%).
89. I also take into account that the number of bowl games has increased between the two periods. As I have explained above, the increase in the number of bowl games reflects the growth in demand for these games and is in itself evidence of quantity demanded and supplied in the output market. Even with this increase in the number of bowl games, however, the percent minor appearances has increased more; the number of bowl game slots has increased from an average of 32 to 55 or a factor of 1.7, compared to the factor of 2.1 for minor team appearances. Thus minor team appearances have increased at a 24% higher rate (2.1 divided by 1.7). These results

¹¹⁵ Hansen Dep., pp. 32:2-33:23, 76:9-76:25; NCAA Division I Bylaws 31.3.1, 31.3.5.

¹¹⁶ National Collegiate Athletic Association, "Official 2006 NCAA Divisions I-A and I-AA Football Records Book," August 2006, pp.271-275, 518-519; EADA.dta.

demonstrate higher participation in the bowl games by minor teams and are consistent with increased competitive balance.

VI. Professor Noll's Proposed Less Restrictive Alternatives

90. Professor Noll recognizes that the NCAA currently provides a cross-subsidy to many colleges.¹¹⁷ He proposes two alternatives to the current approach. First, he states that a lump-sum payment should be made to colleges with low revenues. He appears to claim that a tax on participants in BCS football bowl games should be used. However, he gives no reason to believe that successful colleges would tax themselves more to support smaller revenue schools. The NCAA votes on these issues and the larger and more successful schools could decide to leave the NCAA and form a "super-conference" which would decrease the output since fewer student athletes would receive scholarships to compete at the top level in college football and men's basketball.

91. Professor Noll's other proposed alternative is to raise tuition and fees for all students to finance higher payments to football and basketball players.¹¹⁸ He attempts to claim that the current situation is a "tax" on football and men's basketball players, but he is incorrect in his claim. Student athletes receive the value of a college education which far exceeds the approximately \$10,000 more plaintiffs claim they would receive if the GIA Rule were changed to the COA Rule. The majority of college students graduate with a significant amount of debt (as mentioned above, an average of \$18,900). None of the named plaintiffs finished college with any significant amount of debt.¹¹⁹ Yet upon completion of college (for athletes who do not play professional football or basketball), Professor Noll proposes to increase the debt of students so that athletes will have money to spend during college or perhaps will not have to take a loan or job.


¹¹⁷ Noll Report, pp. 11, 112-113.

¹¹⁸ Noll Report, p. 113.

¹¹⁹

However, both sets of students have received a similar college education.¹²⁰ Given that no output effects occur with a GIA-based scholarship rather than a COA-based scholarship, Professor Noll has advanced no economic reason to increase tuition and debt-load of regular students in favor of athletes who currently receive a highly favorable package of education and sports as the excess supply of student-athletes willing to accept a scholarship at current levels demonstrates.

¹²⁰ In reality, the athletes receive significant amounts of tutoring and other educational benefits not received by non-athletes.

 6 Sept 2007

Jerry A. Hausman
September 6, 2007

Exhibit A

August 2007

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OXFORD UNIVERSITY
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THESIS: "A Theoretical and Empirical Study of Vintage Investment and Production in Great Britain,"
Oxford University, 1973.

FELLOWSHIPS, HONORS AND AWARDS:

Phi Beta Kappa
Marshall Scholar at Oxford, 1970-1972
Scholarship at Nuffield College, Oxford, 1971-1972
Fellow, Econometric Society, 1979
Frisch Medal of the Econometric Society, 1980
Fisher-Schultz Lecture for the Econometric Society, 1982
John Bates Clark Award of the American Economic Association, 1985
Smith Lectures, Brigham Young University 1986
Jacob Marschak Lecture for the Econometric Society, 1988
Hooker Lectures, Macmaster University 1989
Fellow, National Academy of Social Insurance, 1990
American Academy of Arts and Sciences, 1991
Fellow, Journal of Econometrics, 1998
Shann Memorial Lecture for the Australian Economics Society, 2003
Cemmap International Fellow, University College London, 2004
Honorary Professor, Xiamen University, 2005
Biennial Medal of the Modelling and Simulation Society of Australia and New Zealand, 2005
Fellow, Modelling and Simulation Society of Australia and New Zealand, 2005
Condliffe Memorial Lecture, University of Canterbury, NZ, 2005
Invited Lecture, Far East Meetings of Econometric Society, Beijing 2006
Keynote Speaker, ACCC Conference, Australia, 2006

EMPLOYMENT:

	MASSACHUSETTS INSTITUTE OF TECHNOLOGY
1992-	<u>John and Jennie S. MacDonald Professor</u>
1979-	<u>Professor, Department of Economics</u>
1976-79	<u>Associate Professor, Department of Economics</u>
1973-76	<u>Assistant Professor, Department of Economics</u>
1972-73	<u>Visiting Scholar, Department of Economics</u>

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VISITING APPOINTMENTS:

1986-87 Visiting Professor, Harvard Business School
 1982-83 Visiting Professor, Harvard University Department of Economics
Visiting Positions: University of Washington, Australian National University, Ecole Normale Supérieure, Oxford University, University of Sydney, Wuhan University, Beijing University, University of Western Australia, University College London, Uppsala University, Xiamen University

1968-70 U.S. ARMY, ANCHORAGE, ALASKA
Corps of Engineers

PROFESSIONAL ACTIVITIES:

Associate Editor, Bell Journal of Economics, 1974-1983
 Associate Editor, Rand Journal of Economics, 1984-1988
 Associate Editor, Econometrica, 1978-1987
 Reviewer, Mathematical Reviews, 1978-1980
 American Editor, Review of Economic Studies, 1979-82
 Associate Editor, Journal of Public Economics, 1982-1998
 Associate Editor, Journal of Applied Econometrics, 1985-1993
 Advisory Editor, Economics Research Network and Social Science Research, 1998-
 Advisory Editor, Journal of Sports Economics, 1999-
 Advisory Editor, Journal of Competition Law & Economics, 2004-
 Advisory Editor, Journal of Applied Economics, 2005-
 Member of MIT Center for Energy and Environmental Policy Research, 1973-1995
 Research Associate, National Bureau of Economic Research, 1979-
 Member, American Statistical Association Committee on Energy Statistics, 1981-1984
 Special Witness (Master) for the Honorable John R. Bartels, U.S. District Court for the Eastern District of New York in Carter vs. Newsday, Inc., 1981-82
 Member of Governor's Advisory Council (Massachusetts) for Revenue and Taxation, 1984-1992
 Member, Committee on National Statistics, 1985-1990
 Member, National Academy of Social Insurance, 1990-
 Member, Committee to Revise U.S. Trade Statistics 1990-1992
 Director, MIT Telecommunications Economics Research Program, 1988-
 Board of Directors, Theseus Institute, France Telecom University, 1988-1995
 Member, Conference on Income and Wealth, National Bureau of Economic Research, 1992-
 Member, Committee on the Future of Boston, 1998
 Member, GAO Expert Panel to advise USDA on Econometric Models of Cattle Prices, 2001-2
 Advisor, China Ministry of Information on Telecommunications Regulation, 2002-2006
 Member, FTC Panel on Merger Evaluation, 2005

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PUBLICATIONS:**I. Econometrics**

- "Minimum Mean Square Estimators and Robust Regression," *Oxford Bulletin of Statistics*, April 1974.
- "Minimum Distance and Maximum Likelihood Estimation of Structural Models in Econometrics," delivered at the *European Econometric Congress, Grenoble: August 1974*.
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- "An Instrumental Variable Approach to Full-Information Estimators in Linear and Certain Nonlinear Econometric Models," *Econometrica*, Vol. 43(4), 727-738, 1975.
- "Simultaneous Equations with Errors in Variables," *Journal of Econometrics* 3, 1977.
- "Social Experimentation, Truncated Distributions, and Efficient Estimation," *Econometrica*, Vol. 45(4), 919-938, 1977. (with D. Wise)
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- "Attrition Bias in Experimental and Panel Data: The Gary Income Maintenance Experiment," with D. Wise, *Econometrica*, vol. 47(2), 455-473, 1979.
- "Missing Data and Self Selection in Large Panels," *Annales de l'INSEE*, April 1978. (with Z. Griliches and B.H. Hall)
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- "Les modèles probit de choix qualitatifs," ("Alternative Conditional Probit Specifications for qualitative Choice.") (English Version), September 1977; EPRI report on discrete choice models, *Cahiers du Séminar d'Econometrie*, 1980.
- "The Econometrics of Labor Supply on Convex Budget Sets," *Economics Letters*, vol. 3(2), 171-174, 1979.
- "Panel Data and Unobservable Individual Effects," *Econometrica*, vol. 49(6), 1377-1398, 1981. (with W. Taylor)
- "Comparing Specification Tests and Classical Tests," *Economics Letters*, 1981.
- "The Effect of Time on Economic Experiments," invited paper at Fifth World Econometrics Conference, August 1980; in *Advances in Econometrics*, ed. W. Hildebrand, Cambridge University Press, 1982.
- "Sample Design Considerations for the Vermont TOD Use Survey," with John Trimble, *Journal of Public Use Data*, 9, 1981.
- "Identification in Simultaneous Equations Systems with Covariance Restrictions: An Instrumental Variables Interpretation," with W. Taylor, *Econometrica*, Vol. 51(5), 15-27-1549, 1983.

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- "The Design and Analysis of Social and Economic Experiments," invited paper for 43rd International Statistical Institute Meeting, 1981; *Review of the ISI*.
- "Specification and Estimation of Simultaneous Equation Models," in *Handbook of Econometrics*, ed. Z. Griliches and M. Intriligator, vol. 1, 1983.
- "Full-Information Estimators," in Kotz-Johnson, *Encyclopedia of Statistical Science*, vol. 3, 1983.
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- "Specification Tests for the Multinomial Logit Model," with D. McFadden, *Econometrica*, vol. 52(5), 1219-1240, 1984.
- "Econometric Models for Count Data with an Application to the Patents R&D Relationship," *Econometrica*, vol. 52(4), 909-938, 1984.(with Z. Griliches and B. Hall)
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- "Involuntary Early Retirement and Consumption," with L. Paquette. ed. G. Burtless, Economics of Health and Aging, 1987.
- "Income Taxation and Social Insurance in China," in Sino-U.S. Scholars on Hot Issues in China's Economy, 1990.
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- "Regulating the U.S. Railroads: The Effects of Sunk Costs and Asymmetric Risk," with S. Myers, Journal of Regulatory Economics, 22(3), 287-310, 2002.
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- "Sources of Bias and Solutions to Bias in the CPI", NBER Discussion paper 9298, Oct. 2002, Journal of Economic Perspectives, vol. 17(1), 23-44, 2003.
- CPI Bias from Supercenters: Does the BLS Know that Wal-Mart Exists?, with E. Leibtag, presented at conference on Index Numbers, Vancouver, June 2004. NBER Discussion Paper w10712, August 2004.

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"Did Mandatory Unbundling Achieve Its Purpose? Empirical Evidence from Five Countries," with G. Sidak, *Journal of Competitive Law and Economics*, vol. 1(1), 173-245. 2005.

"Telecommunications Regulation: Current Approaches with the End in Sight," NBER conference on regulation, September 2005.

"Commentary on International Taxation: Tax Policy when Corporate Profits are a Return to Labor rather than Capital," with Roger Gordon. March 2007

"The Walmart Effect on CPI Construction," with E. Leibtag, January 2007 mimeo

III. Applied Micro Models

"Project Independence Report: A Review of U.S. Energy Needs up to 1985," *Bell Journal of Economics*, vol. 6(2), 517-551. Autumn 1975.

"Individual Discount Rates and the Purchase and Utilization of Energy Using Durables," *Bell Journal of Economics*, vol. 10(1), 33-54. Spring 1979.

"Voluntary Participation in the Arizona Time of Day Electricity Experiment," with D. Aigner, in EPRI Report, Modeling and Analysis of Electricity Demand by Time of Day, 1979; *Bell Journal of Economics*, 1980.

"A Two-level Electricity Demand Model: Evaluation of the Connecticut Time-of-Day Pricing Test," in EPRI Report, Modeling and Analysis of Electricity Demand by Time of Day, 1979; *Journal of Econometrics*, vol. 10(3), 263-289. 1979.

"Assessing the Potential Demand for Electric Cars," with S. Beggs and S. Cardell, *Journal of Econometrics*, vol. 17(1) 1-19. 1981.

"Assessment and Validation of Energy Models," in Validation and Assessment of Energy Models, ed. S. Gass, Washington: Department of Commerce, 1981.

"Exact Consumer Surplus and Deadweight Loss," *American Economic Review*, 71(4)m 662-676. 1981.

"Appliance Purchase and Usage Adaptation to a Permanent Time of Day Electricity Rate Schedule," with J. Trimble, *Journal of Econometrics*, vol. 26(1-2), 115-139. 1984.

"Evaluating the Costs and Benefits of Appliance Efficiency Standards," with P. Joskow, *American Economic Review*, 72(2), 220-225. 1982.

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"An Overview of IFFS," in Intermediate Future Forecasting System, ed. S. Gass et al., Washington: 1983.

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"Patents and R&D: Searching for a Lag Structure," with B. Hall and Z. Griliches, in Actes du Colloque Econometrie de la Recherche, Paris: 1983.

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- "Residential End-Use Load Shape Estimation from Whole-House Metered Data," with I. Schick, P. Vsoro, and M. Ruanc, IEEE Transactions on Power Systems. 1988.
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- "The Evolution of the Central Office Switch Industry," with W. E. Kohlberg, in ed. S. Bradley and J. Hausman, Future Competition in Telecommunications, 1989.
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Exhibit C

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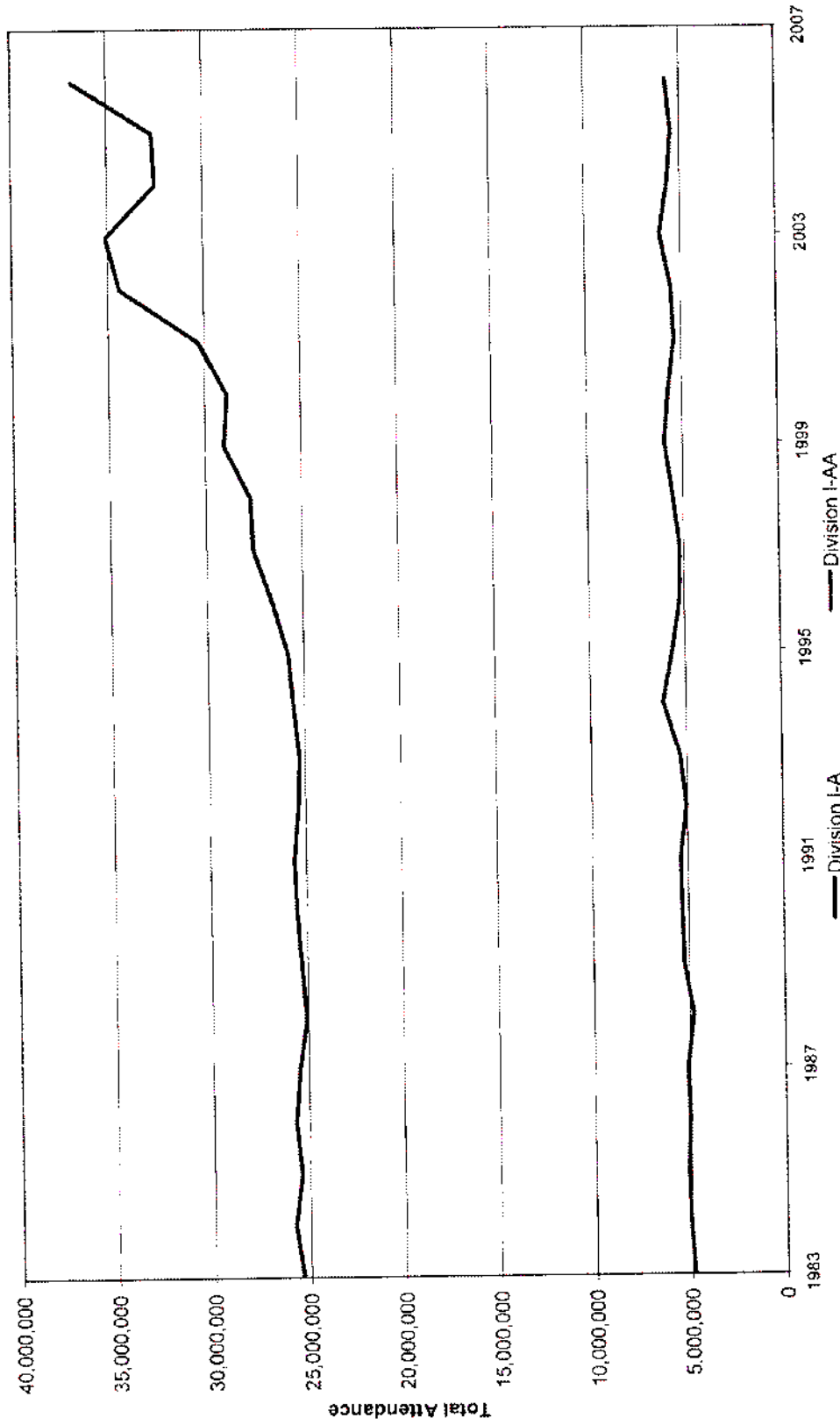
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Exhibit D

Football Attendance
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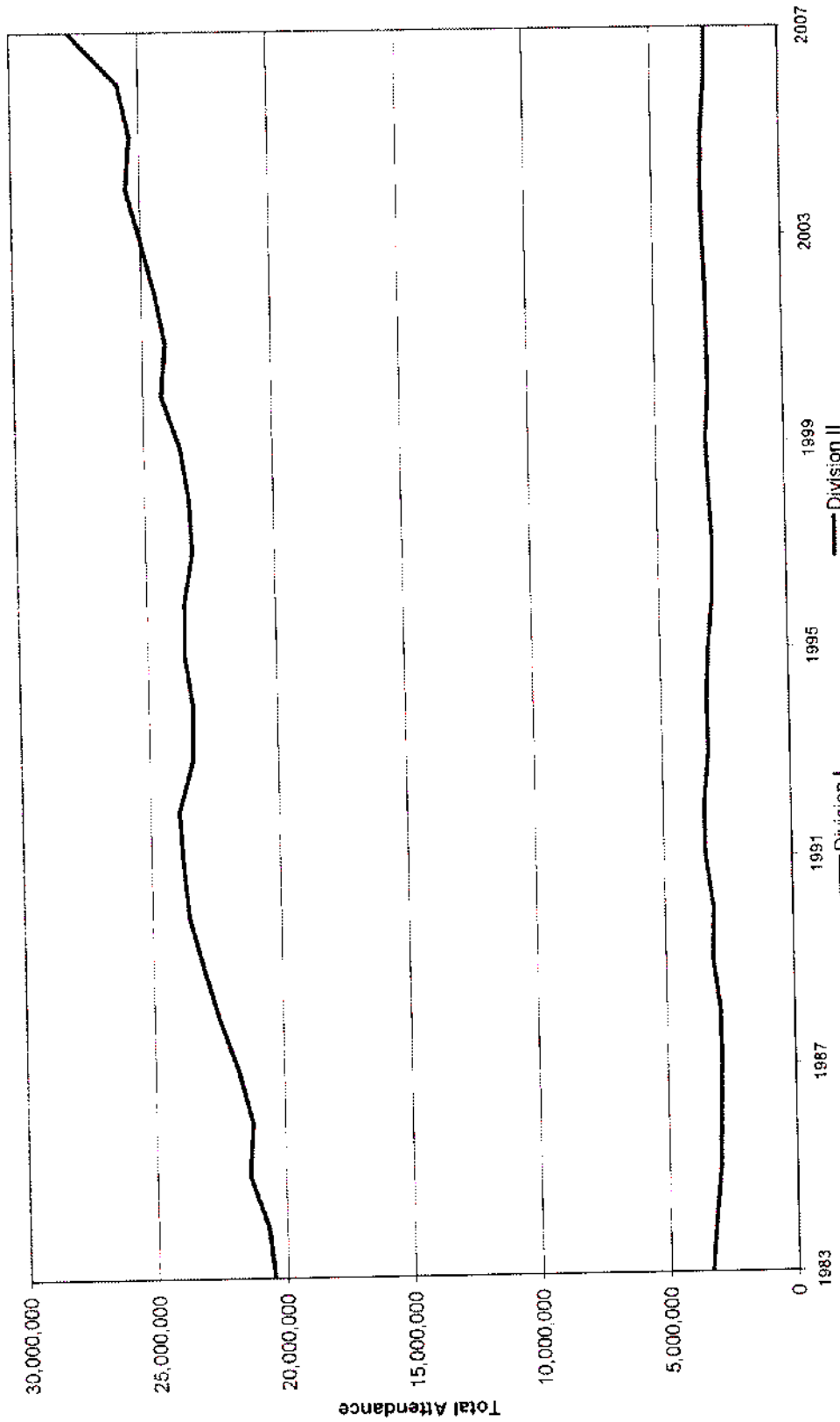


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Exhibit E

**Basketball Attendance
Division I and Division II**



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